



N.º 5 295 PTS.

- GENERADOR DE SPRITES
- EDITOR DE CARACTERES
- DIBUJO
- GENERADOR DE SONIDOS
- DRIVER
- CUBILETES
- CUCO
- PUENTES
- DONUTS
- NATACION
- ALUNIZAJE



BOLETIN DE PEDIDO

Nombre y Apellidos ....

Direccion ....

Ciudad .... Telf. .... D.P. ....

Deseo recibir.. Limpiadores de cassettes al precio de 420 Ptas. Unidad.

Forma de pago: ☐ **Talón** ☐ **Contrareembolso** ☐ **Giro postal**

Remitir a GTS, S. A. - Bailén, n.° 20 - 1.° Izda. D.P. 28005

AMIGOS DEL MSX

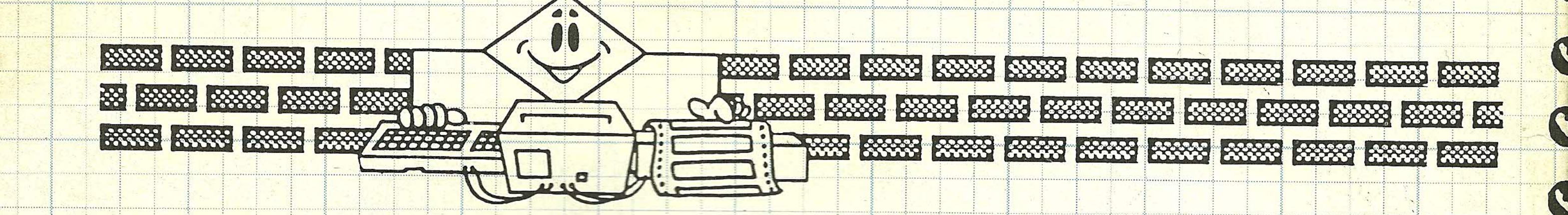


EDITORIAL

Todos los meses, con la revista, pretendemos que sea una guía práctica, incluyendo gran variedad de programas para que puedas disfrutar mientras aprendes.
Encontrarás programas que te mostrarán cómo construir imágenes de cualquier forma y a la vez utilizar el color.
También verás cómo se usan los sprites y a diseñar tus propios caracteres.
Otros programas te mostrarán cómo aplicar gráficos de alta resolución, a producir efectos sonoros y música.
Diviértete.

Edita: Editorial GTS. C/. Bailén, 20. 1.° Izda. 28005 MADRID. **Secretaria Redacción:** Margarita Rancero. **Colaboradores:** Eugenio Garrido, J. F. Martínez, J. Bernal, R. Carralón, J. Ramos, Juan Jesús Ortega. **Dirección Artística y Técnica:** Carlos Gorrindo. **Publicidad:** Bailén, 20. 1°. 28005 MADRID. **Fotocomposición: Gráf. FUTURA, Sdad. Coop. Ltda. Imprime:** Gráf. FUTURA, Sdad. Coop. Ltda. **Distribuye:** R.B.A. Promotora de Ediciones, S. A. Trav. de Gracia, 56. Atico 1.ª. Teléfono: 200 82 56. **Depósito Legal:** M. 3988-1986.

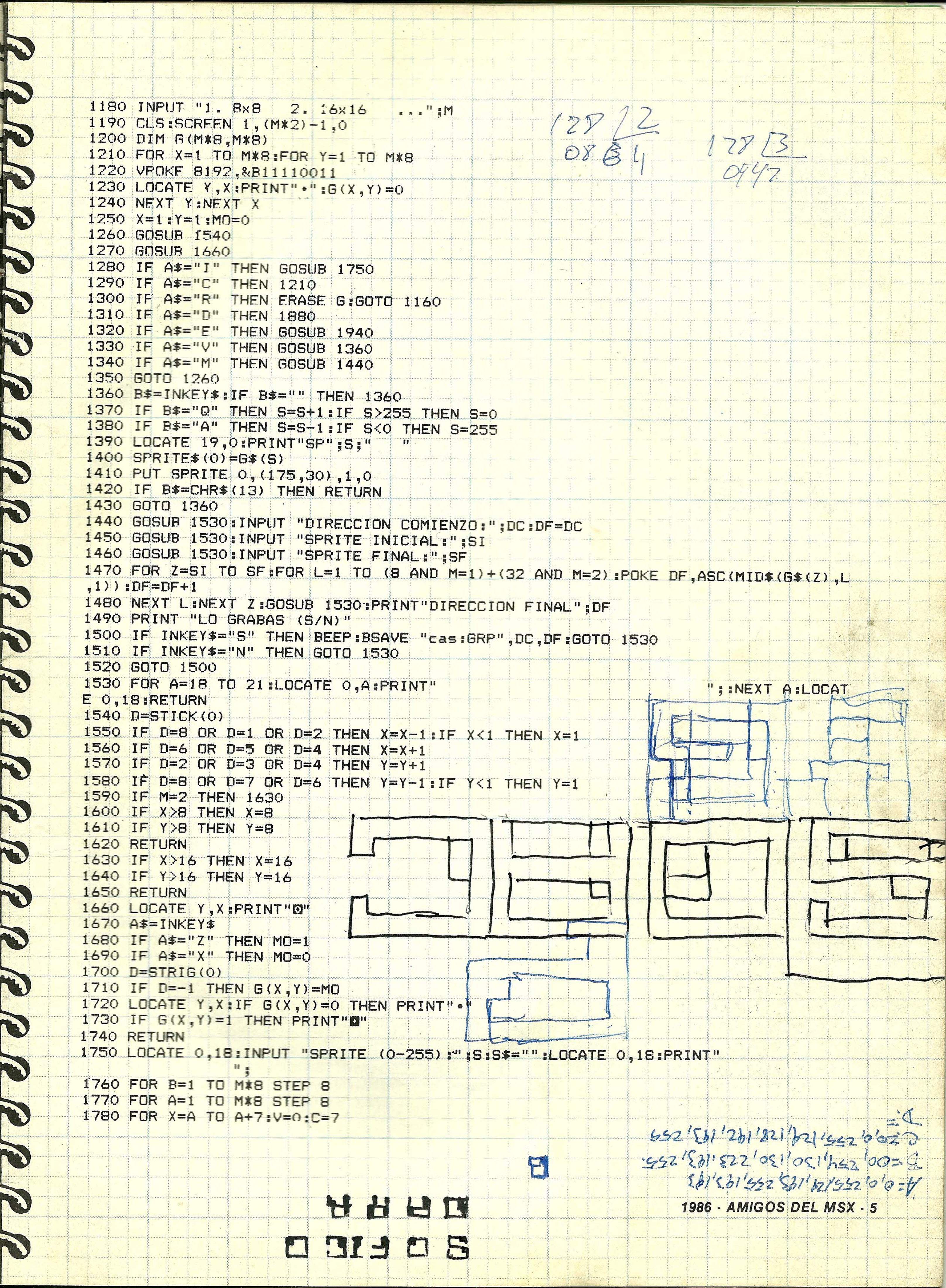
SUMARIO



EXPLICACION DE LOS PROGRAMAS

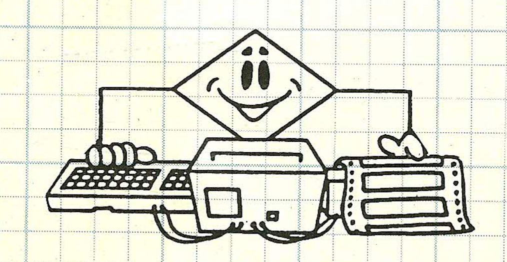
GENERADOR DE SPRITES

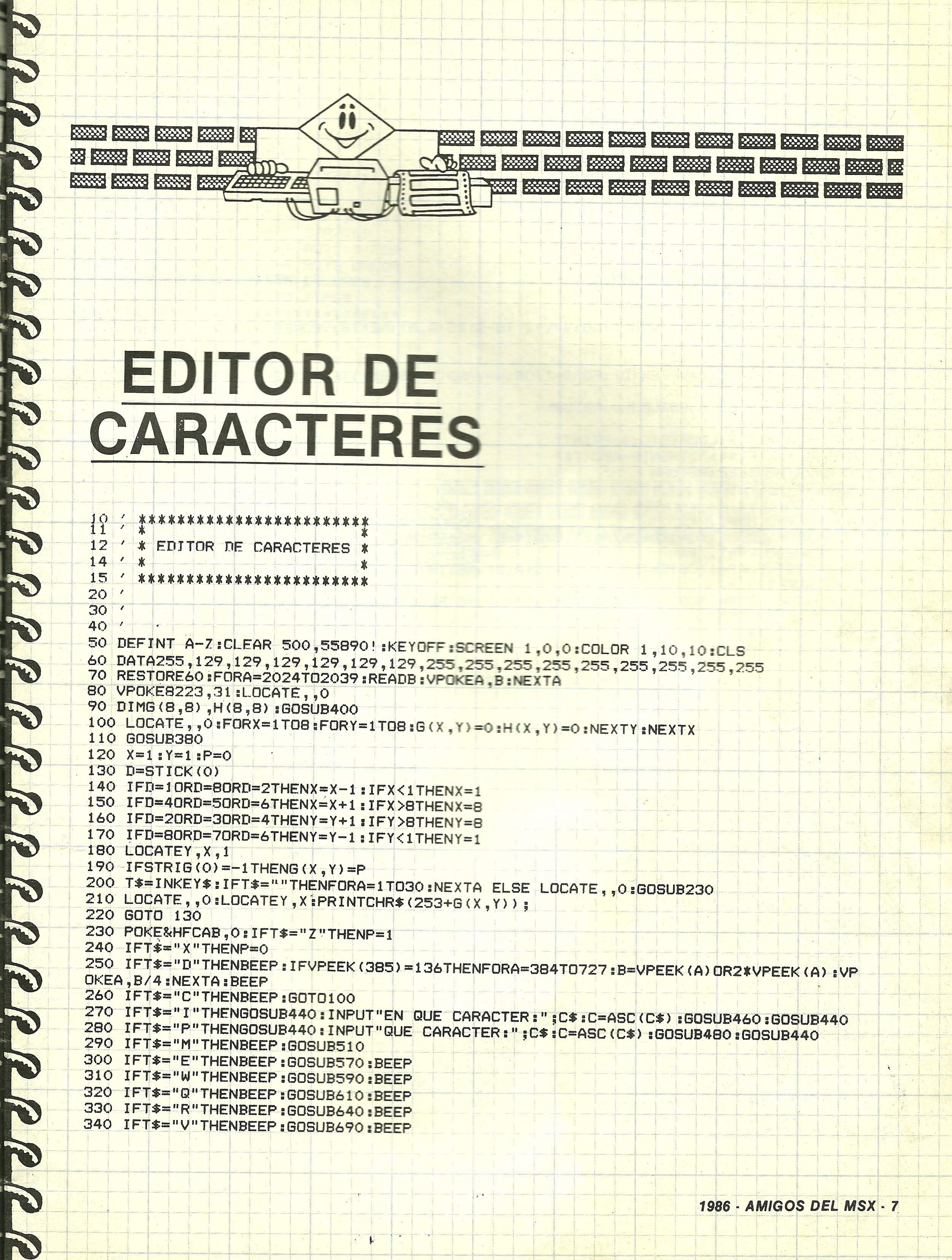
```
1001 ' *************************
1002 ' *                       *
1003 ' * GENERADOR DE SPRITES  *
1004 ' *                       *
1005 ' *************************
1010 '
1020 '
1030 ' Z. PINTAR      X. BORRAR
1040 ' SPACE. PUNTO  CURSORES. CONTROL
1050 ' V. MUESTRAS (Q>,A<,RETURN. FIN)
1060 ' D. DATAS DEL SPRITE EN CURSO
1070 ' R. RUN          C. CLS
1080 ' M. METE EN MEMORIA Y GRABA
1090 ' F. ESPEJO
1100 ' I. INTRODUCE SPRITE EN CURSO
1110 '
1120 '
1130 '
1140 POKE&HFCAB,1:CLEAR 3000,51000!:DIM G$(255)
1150 ON ERROR GOTO 2030
1160 SCREEN 1,1,0:KEYOFF
1170 COLOR 1,4,4
```



```
1180 INPUT "1. 8x8   2. 16x16   ...";M
1190 CLS:SCREEN 1,(M*2)-1,0
1200 DIM G(M*8,M*8)
1210 FOR X=1 TO M*8:FOR Y=1 TO M*8
1220 VPOKE 8192,&B11110011
1230 LOCATE Y,X:PRINT"•":G(X,Y)=0
1240 NEXT Y:NEXT X
1250 X=1:Y=1:MO=0
1260 GOSUB 1540
1270 GOSUB 1660
1280 IF A$="I" THEN GOSUB 1750
1290 IF A$="C" THEN 1210
1300 IF A$="R" THEN ERASE G:GOTO 1160
1310 IF A$="D" THEN 1880
1320 IF A$="E" THEN GOSUB 1940
1330 IF A$="V" THEN GOSUB 1360
1340 IF A$="M" THEN GOSUB 1440
1350 GOTO 1260
1360 B$=INKEY$:IF B$="" THEN 1360
1370 IF B$="Q" THEN S=S+1:IF S>255 THEN S=0
1380 IF B$="A" THEN S=S-1:IF S<0 THEN S=255
1390 LOCATE 19,0:PRINT"SP";S;"    "
1400 SPRITE$(0)=G$(S)
1410 PUT SPRITE 0,(175,30),1,0
1420 IF B$=CHR$(13) THEN RETURN
1430 GOTO 1360
1440 GOSUB 1530:INPUT "DIRECCION COMIENZO:";DC:DF=DC
1450 GOSUB 1530:INPUT "SPRITE INICIAL:";SI
1460 GOSUB 1530:INPUT "SPRITE FINAL:";SF
1470 FOR Z=SI TO SF:FOR L=1 TO (8 AND M=1)+(32 AND M=2):POKE DF,ASC(MID$(G$(Z),L
,1)):DF=DF+1
1480 NEXT L:NEXT Z:GOSUB 1530:PRINT"DIRECCION FINAL";DF
1490 PRINT "LO GRABAS (S/N)"
1500 IF INKEY$="S" THEN BEEP:BSAVE "cas:GRP",DC,DF:GOTO 1530
1510 IF INKEY$="N" THEN GOTO 1530
1520 GOTO 1500
1530 FOR A=18 TO 21:LOCATE 0,A:PRINT"                                        ";:NEXT A:LOCAT
E 0,18:RETURN
1540 D=STICK(0)
1550 IF D=8 OR D=1 OR D=2 THEN X=X-1:IF X<1 THEN X=1
1560 IF D=6 OR D=5 OR D=4 THEN X=X+1
1570 IF D=2 OR D=3 OR D=4 THEN Y=Y+1
1580 IF D=8 OR D=7 OR D=6 THEN Y=Y-1:IF Y<1 THEN Y=1
1590 IF M=2 THEN 1630
1600 IF X>8 THEN X=8
1610 IF Y>8 THEN Y=8
1620 RETURN
1630 IF X>16 THEN X=16
1640 IF Y>16 THEN Y=16
1650 RETURN
1660 LOCATE Y,X:PRINT"◘"
1670 A$=INKEY$
1680 IF A$="Z" THEN MO=1
1690 IF A$="X" THEN MO=0
1700 D=STRIG(0)
1710 IF D=-1 THEN G(X,Y)=MO
1720 LOCATE Y,X:IF G(X,Y)=0 THEN PRINT"•"
1730 IF G(X,Y)=1 THEN PRINT"■"
1740 RETURN
1750 LOCATE 0,18:INPUT "SPRITE (0-255):";S:S$="":LOCATE 0,18:PRINT"
                  ";
1760 FOR B=1 TO M*8 STEP 8
1770 FOR A=1 TO M*8 STEP 8
1780 FOR X=A TO A+7:V=0:C=7
```

```
1790 FOR Y=B TO B+7:V=V+G(X,Y)*2^(C):C=C-1
1800 NEXT Y:S$=S$+CHR$(V)
1810 NEXT X:NEXT A:NEXT B
1820 G$(S)=S$
1830 SPRITE$(0)=S$
1840 LOCATE 19,0:PRINT"SP";S;"    "
1850 PUT SPRITE 0,(175,30),1,0
1860 X=1:Y=1
1870 RETURN
1880 LOCATE 0,18:INPUT "SPRITE:";S:SCREEN 0
1890 A$=STR$(S):PRINT9000+S;"DATA ";
1900 V=(8 AND M=1)+(32 AND M=2)
1910 FOR A=1 TO V
1920 V$=STR$(ASC(MID$(S$,A,1))):PRINT MID$(V$,2,5);:IF A<>V THEN PRINT",";
1930 NEXT A:END
1940 A=M*8
1950 FOR L=1 TO A:FOR Z=1 TO A/2
1960 C=G(L,Z):G(L,Z)=G(L,A+1-Z):G(L,A+1-Z)=C
1970 NEXT Z:FOR Z=1 TO A:LOCATE Z,L
1980 IF G(L,Z)=0 THEN PRINT"•" ELSE PRINT"■"
1990 NEXT Z
2000 NEXT L
2010 RETURN
2020 FOR N=0 TO 32*1:VPOKE 14336+N,PEEK(53100!+N):NEXT N
2030 BEEP:SCREEN 0:PRINT"ERROR...":IF ERR=5 THEN PRINT:PRINT"DEFINE PRIMERO EL S
PRITE...            E INTRODUCELO  EN UNA MUESTRA."
2040 FOR A=1 TO 2000:NEXT A:ERASE G:RESUME 1190
```





EDITOR DE CARACTERES

```
10 ' ************************
11 ' *                      *
12 ' * EDITOR DE CARACTERES *
14 ' *                      *
15 ' ************************
20 '
30 '
40 '
50 DEFINT A-Z:CLEAR 500,55890!:KEYOFF:SCREEN 1,0,0:COLOR 1,10,10:CLS
60 DATA255,129,129,129,129,129,129,255,255,255,255,255,255,255,255,255
70 RESTORE60:FORA=2024TO2039:READB:VPOKEA,B:NEXTA
80 VPOKE8223,31:LOCATE,,0
90 DIMG(8,8),H(8,8):GOSUB400
100 LOCATE,,0:FORX=1TO8:FORY=1TO8:G(X,Y)=0:H(X,Y)=0:NEXTY:NEXTX
110 GOSUB380
120 X=1:Y=1:P=0
130 D=STICK(0)
140 IFD=1ORD=8ORD=2THENX=X-1:IFX<1THENX=1
150 IFD=4ORD=5ORD=6THENX=X+1:IFX>8THENX=8
160 IFD=2ORD=3ORD=4THENY=Y+1:IFY>8THENY=8
170 IFD=8ORD=7ORD=6THENY=Y-1:IFY<1THENY=1
180 LOCATEY,X,1
190 IFSTRIG(0)=-1THENG(X,Y)=P
200 T$=INKEY$:IFT$=""THENFORA=1TO30:NEXTA ELSE LOCATE,,0:GOSUB230
210 LOCATE,,0:LOCATEY,X:PRINTCHR$(253+G(X,Y));
220 GOTO 130
230 POKE&HFCAB,0:IFT$="Z"THENP=1
240 IFT$="X"THENP=0
250 IFT$="D"THENBEEP:IFVPEEK(385)=136THENFORA=384TO727:B=VPEEK(A)OR2*VPEEK(A):VP
OKEA,B/4:NEXTA:BEEP
260 IFT$="C"THENBEEP:GOTO100
270 IFT$="I"THENGOSUB440:INPUT"EN QUE CARACTER:";C$:C=ASC(C$):GOSUB460:GOSUB440
280 IFT$="P"THENGOSUB440:INPUT"QUE CARACTER:";C$:C=ASC(C$):GOSUB480:GOSUB440
290 IFT$="M"THENBEEP:GOSUB510
300 IFT$="E"THENBEEP:GOSUB570:BEEP
310 IFT$="W"THENBEEP:GOSUB590:BEEP
320 IFT$="Q"THENBEEP:GOSUB610:BEEP
330 IFT$="R"THENBEEP:GOSUB640:BEEP
340 IFT$="V"THENBEEP:GOSUB690:BEEP
```

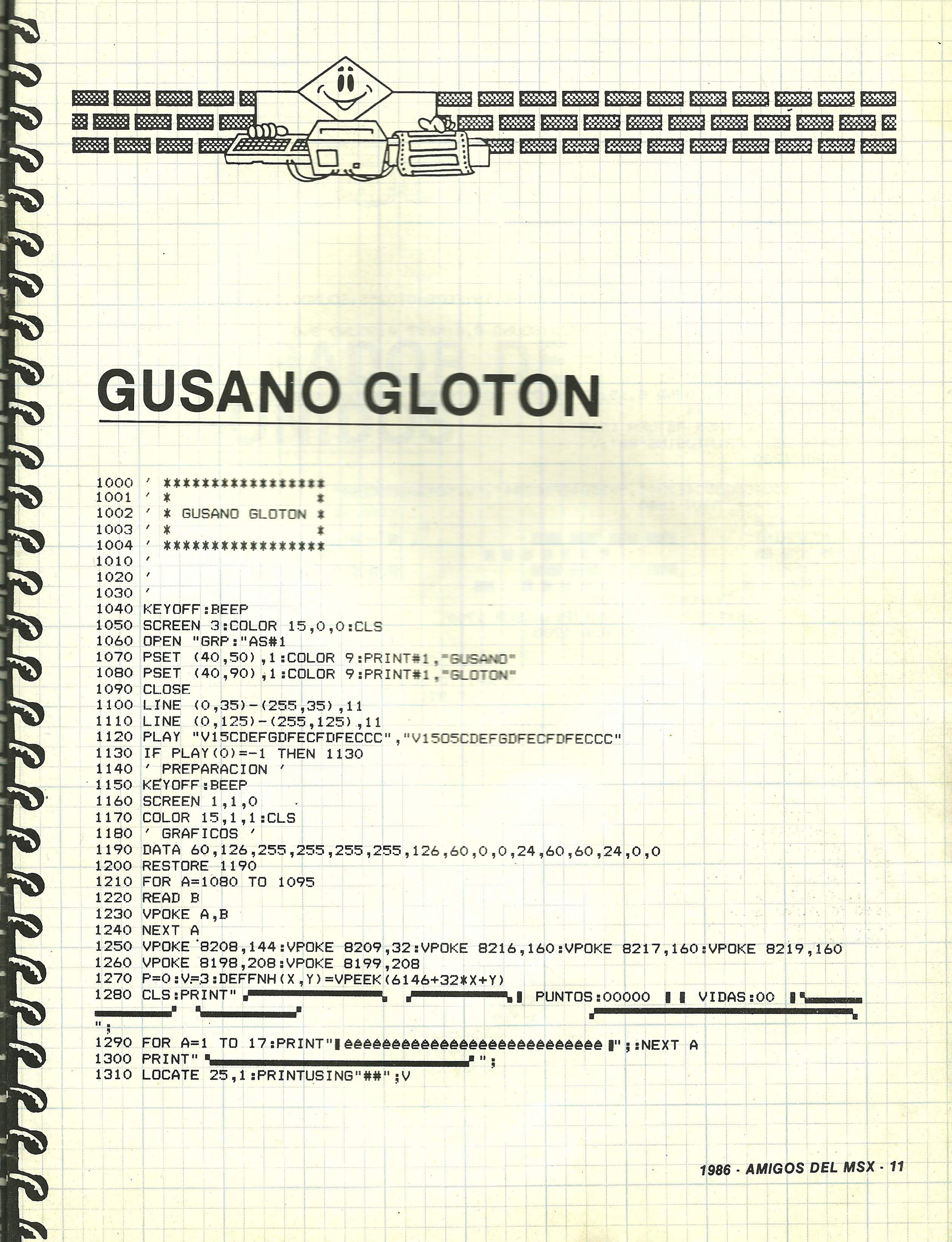
```
350 IFT$="S"THENBEEP:GOSUB850:BEEP
360 IFT$="L"THENBEEP:GOSUB960:BEEP
370 POKE&HFCAB,255:RETURN
380 '** SACA CELDILLA **
390 FORA=1TO8:FORB=1TO8:LOCATEB,A:PRINTCHR$(253+G(A,B));:NEXTB:NEXTA:RETURN
400 '** MUESTRA **
410 C=40:FORA=1TO9:FORB=1TO24:LOCATEB+1,A+9
420 IFC<>127THENPRINTCHR$(C);
430 C=C+1:NEXTB:NEXTA:RETURN
440 '** BORRA INPUT **
450 FORA=20TO23:LOCATE0,A:PRINT"                                        ";:NEXTA:LOCATE1,21:
RETURN
460 '** METE CARACTER **
470 D=C*8:FORA=1TO8:V=0:FORB=1TO8:V=V+2^(8-B)*G(A,B):NEXTB:VPOKED,V:D=D+1:NEXTA:
RETURN
480 '** SACA CARACTER **
490 D=C*8:FORA=1TO8:V=VPEEK(D):FORB=1TO8:W=VAND(2^(8-B)):IFW=2^(8-B)THENG(A,B)=1
 ELSE G(A,B)=0
500 NEXTB:D=D+1:NEXTA:GOSUB380:RETURN
510 '** PIZARRA **
520 TE=0:FORA=1TO8:LOCATE10,A:PRINT"                     ";:NEXTA:LOCATE10,1,1
530 T$=INKEY$:IFT$<>""THENTE=ASC(T$)
540 IFTE=27THENBEEP:RETURN
550 PRINTT$;
560 GOTO 530
570 '** ESPEJO HORZ. **
580 FORA=1TO8:FORB=1TO4:SWAPG(A,B),G(A,9-B):NEXTB:NEXTA:GOTO380
590 '** ESPEJO VERT. **
600 FORA=1TO4:FORB=1TO8:SWAPG(9-A,B),G(A,B):NEXTB:NEXTA:GOTO380
610 '** INVERTIR **
620 FORA=1TO8:FORB=1TO8:IFG(A,B)=1THENG(A,B)=0 ELSE G(A,B)=1
630 NEXTB:NEXTA:GOTO380
640 '** ROTAR **
650 FORA=1TO8:FORB=1TO8
660 H(B,9-A)=G(A,B):NEXTB:NEXTA
670 FORA=1TO8:FORB=1TO8:G(A,B)=H(A,B):NEXTB:NEXTA
680 GOTO 380
690 '** COLORES **
700 GOSUB440:PRINT" ** CAMBIO DE COLORES: **"
710 FORA=1TO8:LOCATE10,A:PRINT"                    ";:NEXTA
720 TI=1:PA=10:HL=12
730 D=STICK(0)
740 IFD=1THENHL=HL-1:IFHL<0THENHL=0
750 IFD=5THENHL=HL+1:IFHL>31THENHL=31
760 IFD=7THENTI=TI+1:IFTI>15THENTI=0
770 IFD=3THENPA=PA+1:IFPA>15THENPA=0
780 LOCATE 10,1:PRINT"HL:";HL
790 LOCATE 10,3:PRINT"TI:";TI
800 LOCATE 10,5:PRINT"PA:";PA
810 VA=VPEEK(8192+HL):VPOKE(8192+HL),0:FORA=1TO20:NEXTA:VPOKE(8192+HL),VA:FORA=1
TO50:NEXTA
820 IFINKEY$=CHR$(27)THENGOTO440
830 IFSTRIG(0)=-1THENVPOKE8192+HL,PA+TI*16:BEEP
840 GOTO 730
850 '** SAVE **
860 GOSUB440:PRINT"GUARDANDO EN MEMORIA..."
870 DATA1,0,8,17,0,0,33,88,218,205,92,0
880 DATA1,32,0,17,0,32,33,88,226,205,92,0,201
890 FORA=0TO2047:POKEA+55896!,VPEEK(A):NEXTA
900 FORA=0TO31:POKEA+57944!,VPEEK(A+8192):NEXTA
910 RESTORE870:FORA=57976!TO58000!:READB:POKEA,B:NEXTA
920 GOSUB440:INPUT"NOMBRE:";N$:IFN$=""THEN950
930 N$="CAS:"+N$:N$=MID$(N$,1,10)
940 BSAVE N$,55896!,58000!,57976!
```

```
950 GOSUB440:RETURN
960 '** LOAD **
970 GOSUB 440:PRINT"CARGANDO...":BLOAD "CAS:",R
980 GOSUB440:RETURN
990 '
1000 '
1010 '
1020 '** DATOS RUTINA *********
1030 ' 58000 ------- SPRITES
1040 ' 57976 ------- RUT1 TIPOS
1050 ' 57988 ------- RUT2 COLOR
1060 ' 57944 - 57975 COLORES
1070 ' 55896 - 57943 TIPOS
1080 '*************************
```

DIBUJO

```
1000 ' **********
1001 ' *        *
1002 ' * DIBUJO *
1003 ' *        *
1004 ' **********
1010 '
1020 '
1030 '
1040 '
1050 '
1060 CLEAR 500,49100!:POKE&HFCAB,255:GOSUB 1650:DEFINTA-Z
1070 KEYOFF:COLOR 1,15,15:SCREEN 0:INPUT"TINTA:";T:PRINT:INPUT "PAPEL:";P:PRINT:
INPUT "BORDER:";B
1080 SCREEN 2,0,0
1090 COLOR T,P,B:CLS
1100 OPEN "GRP:" AS#1
1110 DEFUSR1=49150!:DEFUSR2=49175!
1120 DATA 16,16,16,238,16,16,16,0
1130 RESTORE 1120:FORA=14336TO14343:READC:VPOKEA,C:NEXTA
1140 BO=0:X=127:Y=80:XB=X:YB=Y:PA=1
1150 D=STICK(0)
1160 IFD=1ORD=2ORD=8THENY=Y-PA:IFY<0THENY=0
```

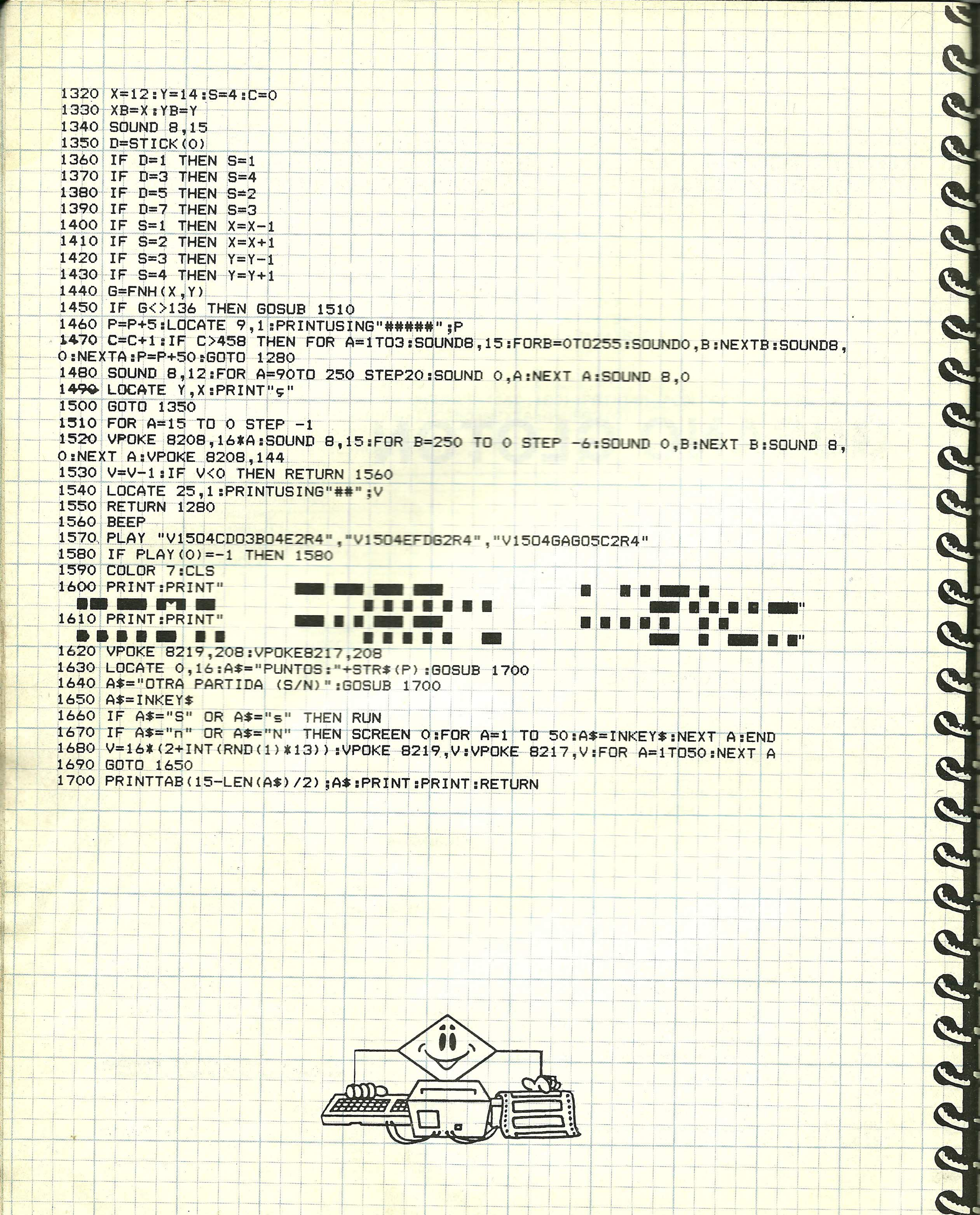
```
1170 IFD=4ORD=5ORD=6THENY=Y+PA:IFY>191THENY=191
1180 IFD=2ORD=3ORD=4THENX=X+PA:IFX>255THENX=255
1190 IFD=8ORD=7ORD=6THENX=X-PA:IFX<0THENX=0
1200 PUTSPRITE0,(X-3,Y-4),T,0
1210 IFSTRIG(0)=-1THENIFBO=0THENPSET(X,Y),T:XB=X:YB=Y ELSE PRESET(X,Y),T:XB=X:YB
=Y
1220 T$=INKEY$:IFT$<>""THENGOSUB1240
1230 GOTO 1150
1240 TE=ASC(T$)
1250 IFTE=24THENIFPA=8THENPA=1ELSEPA=8
1260 IFT$="V"THENA=USR1(0):LINE(XB,YB)-(X,Y),T
1270 IFT$="Z"THENA=USR1(0):LINE(XB,YB)-(X,Y),T:XB=X:YB=Y
1280 IFT$="N"THENA=USR1(0):LINE(XB,YB)-(X,Y),T,B:XB=X:YB=Y
1290 IFT$="C"THENA=USR1(0):LINE(XB,YB)-(X,Y),T,BF:XB=X:YB=Y
1300 IFT$="F"THENA=USR1(0):PAINT(X,Y),T,T
1310 IFT$="="THENT=T+1:IFT>15THENT=0
1320 IFT$="-"THENT=T-1:IFT<0THENT=15
1330 IFT$="="ORT$="-"THENA=USR1(0):PRESET (160,180):PRINT#1,"COLOR:";T:LINE (20,
180)-(140,187),T,BF:BEEP:BEEP:FORA=1TO350:NEXTA:A=USR2(0)
1340 IFTE=8THENBEEP:A=USR2(0)
1350 IFT$="B"THENGOSUB1460:CIRCLE(X,Y),C,T
1360 IFT$="A"THENGOSUB1460
1370 IFT$="S"THENGOSUB1460
1380 IFT$="L"THENGOSUB1460
1390 IFT$="1"THENBO=0
1400 IFT$="2"THENBO=1
1410 IFT$="3"THENBO=1:T=P
1420 IFT$="5"THENCLS
1430 IFT$="6"THENRUN
1440 IFT$="7"THENGOSUB1530
1450 RETURN
1460 A=USR1(0):SCREEN 0:COLOR 1,15,15
1470 IFT$="B"THENINPUT"RADIO:";C
1480 IFT$="A"THENINPUT"PASO:";PA
1490 IFT$="S"THENINPUT"SAVE, NOMBRE:";N$:N$="CAS:"+N$:BSAVE N$,49175!,61498!
1500 IFT$="L"THENBLOAD"CAS:"
1510 IFT$="T"THENINPUT"TINTA:";TI:PRINT:INPUT"PAPEL:";PL:V=TI*16+PL
1520 SCREEN 2:COLOR T,P,B:CLS:A=USR2(0):RETURN
1530 XZ=X:XZ=X/8:YZ=Y
1540 V=T*16+P
1550 D=STICK(0)
1560 IFD=1ORD=8ORD=2THENY=Y-1:IFY<0THENY=0
1570 IFD=4ORD=5ORD=5THENY=Y+1:IFY>191THENY=191
1580 IFD=2ORD=3ORD=4THENX=X+1:IFX>31THENX=31
1590 IFD=6ORD=7ORD=8THENX=X-1:IFX<0THENX=0
1600 PUTSPRITE0,(X*8,Y-4),T
1610 IFSTRIG(0)=-1THENVPOKE(8192+Y MOD 8+X*8+256*INT(Y/8)),V
1620 T$=INKEY$:IFT$="T"THENGOSUB1460
1630 IFT$="R"THENX=XZ:Y=YZ:BEEP:RETURN
1640 GOTO 1550
1650 DATA 1,0,18,21,0,0,11,3A,C0,CD,59,0,1,0,18,21,0,20,11,3A,D8,CD,59,0,C9,1,0,
18,11,0,0,21,3A,C0,CD,5C,0,1,0,18,11,0,20,21,3A,D8,CD,5C,0,C9,E7
1660 RESTORE 1650
1670 FOR A=49150! TO 49200!:READ A$:B=VAL("&H"+A$):POKE A,B:NEXT A
1680 RETURN
```

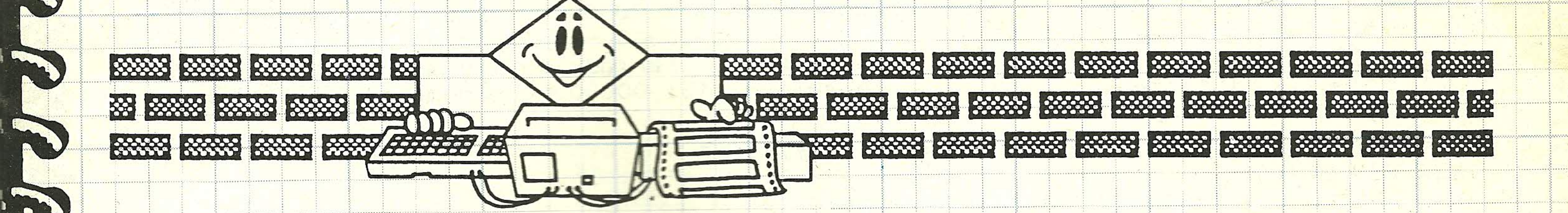


GUSANO GLOTON

```
1000 ' ******************
1001 ' *                *
1002 ' * GUSANO GLOTON  *
1003 ' *                *
1004 ' ******************
1010 '
1020 '
1030 '
1040 KEYOFF:BEEP
1050 SCREEN 3:COLOR 15,0,0:CLS
1060 OPEN "GRP:"AS#1
1070 PSET (40,50),1:COLOR 9:PRINT#1,"GUSANO"
1080 PSET (40,90),1:COLOR 9:PRINT#1,"GLOTON"
1090 CLOSE
1100 LINE (0,35)-(255,35),11
1110 LINE (0,125)-(255,125),11
1120 PLAY "V15CDEFGDFECFDFECCC","V15O5CDEFGDFECFDFECCC"
1130 IF PLAY(0)=-1 THEN 1130
1140 ' PREPARACION '
1150 KEYOFF:BEEP
1160 SCREEN 1,1,0
1170 COLOR 15,1,1:CLS
1180 ' GRAFICOS '
1190 DATA 60,126,255,255,255,255,126,60,0,0,24,60,60,24,0,0
1200 RESTORE 1190
1210 FOR A=1080 TO 1095
1220 READ B
1230 VPOKE A,B
1240 NEXT A
1250 VPOKE 8208,144:VPOKE 8209,32:VPOKE 8216,160:VPOKE 8217,160:VPOKE 8219,160
1260 VPOKE 8198,208:VPOKE 8199,208
1270 P=0:V=3:DEFFNH(X,Y)=VPEEK(6146+32*X+Y)
1280 CLS:PRINT" ┌──────────┐ ┌───────┐│ PUNTOS:00000 ││ VIDAS:00 │└──────
──────┘ └───────┘                                  └────────────────────┘
";
1290 FOR A=1 TO 17:PRINT"│eeeeeeeeeeeeeeeeeeeeeeeeeeee│";:NEXT A
1300 PRINT" └────────────────────────────┘";
1310 LOCATE 25,1:PRINTUSING"##";V
```

```
1320 X=12:Y=14:S=4:C=0
1330 XB=X:YB=Y
1340 SOUND 8,15
1350 D=STICK(0)
1360 IF D=1 THEN S=1
1370 IF D=3 THEN S=4
1380 IF D=5 THEN S=2
1390 IF D=7 THEN S=3
1400 IF S=1 THEN X=X-1
1410 IF S=2 THEN X=X+1
1420 IF S=3 THEN Y=Y-1
1430 IF S=4 THEN Y=Y+1
1440 G=FNH(X,Y)
1450 IF G<>136 THEN GOSUB 1510
1460 P=P+5:LOCATE 9,1:PRINTUSING"#####";P
1470 C=C+1:IF C>458 THEN FOR A=1TO3:SOUND8,15:FORB=0TO255:SOUND0,B:NEXTB:SOUND8,
0:NEXTA:P=P+50:GOTO 1280
1480 SOUND 8,12:FOR A=90TO 250 STEP20:SOUND 0,A:NEXT A:SOUND 8,0
1490 LOCATE Y,X:PRINT"ç"
1500 GOTO 1350
1510 FOR A=15 TO 0 STEP -1
1520 VPOKE 8208,16*A:SOUND 8,15:FOR B=250 TO 0 STEP -6:SOUND 0,B:NEXT B:SOUND 8,
0:NEXT A:VPOKE 8208,144
1530 V=V-1:IF V<0 THEN RETURN 1560
1540 LOCATE 25,1:PRINTUSING"##";V
1550 RETURN 1280
1560 BEEP
1570 PLAY "V15O4CDO3BO4E2R4","V15O4EFDG2R4","V15O4GAGO5C2R4"
1580 IF PLAY(0)=-1 THEN 1580
1590 COLOR 7:CLS
1600 PRINT:PRINT"          ████ ████ ████ ████         ■  ■ ■ ████ ■
 ██ ███ ██ ██         ■ ■ ■ ■ ■ ■ ■              ████ ■ ■ ■ ■ ████"
1610 PRINT:PRINT"          ████ ■ ■ ████ ████         ■ ■ ■ ■ ■ ■ ■ ■ ■
 ■ ■ ■ ■ ██ ■ ■       ■ ■ ■ ■ ■ ■   ██             ███ ■ ████ ■ ■"
1620 VPOKE 8219,208:VPOKE8217,208
1630 LOCATE 0,16:A$="PUNTOS:"+STR$(P):GOSUB 1700
1640 A$="OTRA PARTIDA (S/N)":GOSUB 1700
1650 A$=INKEY$
1660 IF A$="S" OR A$="s" THEN RUN
1670 IF A$="n" OR A$="N" THEN SCREEN 0:FOR A=1 TO 50:A$=INKEY$:NEXT A:END
1680 V=16*(2+INT(RND(1)*13)):VPOKE 8219,V:VPOKE 8217,V:FOR A=1TO50:NEXT A
1690 GOTO 1650
1700 PRINTTAB(15-LEN(A$)/2);A$:PRINT:PRINT:RETURN
```

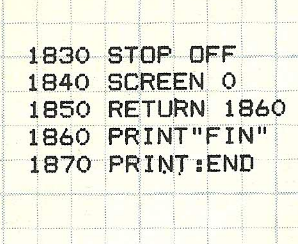




GENERADOR DE SONIDOS

```
1000 '   ************************
1001 '♪ *                      *  ♫
1002 '  * GENERADOR DE SONIDOS * ♪
1003 '  *                      *
1004 '   ************************
1010 '
1020 '
1030 '
1040 '
1050 KEYOFF
1060 BEEP
1070 SCREEN 3,,0
1080 COLOR 1,15,15
1090 CLS
1100 A=RND(-TIME)
1110 OPEN "GRP:" AS#1
1120 PRESET (0,0)
1130 PLAY "V15T20004BBBAGFEDCO3BAGFEDCO2BAGFEDCCC","V15T20006BBBAGFEDCO5BAGFEDCO
4BAGFEDCCC"
1140 FOR A=1 TO 60
1150 COLOR 1+RND(1)*13
1160 PRINT#1," SOUND»"
1170 NEXT A
1180 CLOSE
1190 FOR A=1 TO 1000
1200 NEXT A
1210 ON STOP GOSUB 1810
1220 STOP ON
1230 SCREEN 0,,0
1240 COLOR 1,15
1250 LOCATE ,,0
1260 PRINT"*************************************** GENERADOR DE SONIDOS ** CREASO
UND *************************************** "
1270 PRINT"00: 00000000 -Tono A: Byte Inferior  01: 00000000          Byte Super
ior"
1280 PRINT"02: 00000000 -Tono B: Byte Inferior  03: 00000000          Byte Super
ior"
1290 PRINT"04: 00000000 -Tono C: Byte Inferior  05: 00000000          Byte Super
```

```
ior"
1300 PRINT"06: 00000000 -Generador Ruido (0-31) 07: 00000000 -Habilita Voz y Rui
do   08: 00000000 -Amplitud voz A          09: 00000000 -Amplitud voz B         1
0: 00000000 -Amplitud voz C          11: 00000000 -Periodo env. byte inf."
1310 PRINT"12: 00000000                  byte sup. 13: 00000000 -Forma de la envolv
ente  "
1320 PRINT"*************************************"
1330 DIM S$(13)
1340 DEF FN B$(N)=RIGHT$("00000000"+BIN$(N),8)
1350 FOR A=0 TO 13
1360 SOUND A,0
1370 S$(A)="00000000"
1380 LOCATE 4,A+4
1390 PRINTS$(A);
1400 NEXT A
1410 X=0:Y=0
1420 D=STICK(0)
1430 IFD=1ORD=2ORD=8THENX=X-1:IFX<0THENX=0
1440 IFD=4ORD=5ORD=6THENX=X+1:IFX>13THENX=13
1450 IFD=2ORD=3ORD=4THENY=Y+1:IFY>7THENY=7
1460 IFD=6ORD=7ORD=8THENY=Y-1:IFY<0THENY=0
1470 LOCATE Y+4,X+4,1
1480 IFSTRIG(0)=-1THENGOSUB 1560
1490 A$=INKEY$
1500 IF A$="=" THEN GOSUB 1610
1510 IF A$="-" THEN GOSUB 1640
1520 IF A$=CHR$(13) THEN GOSUB 1590
1530 IF A$="C" THEN BEEP:GOTO 1350
1540 IF INKEY$="D" THENGOSUB 1730
1550 GOTO 1420
1560 A$=MID$(S$(X),Y+1,1)
1570 IFA$="1"THENMID$(S$(X),Y+1,1)="0":LOCATE Y+4,X+4,0:PRINT"0"
1580 IFA$="0"THENMID$(S$(X),Y+1,1)="1":LOCATE Y+4,X+4,0:PRINT"1"
1590 SOUND X,VAL("&B"+S$(X))
1600 RETURN
1610 N=VAL("&B"+S$(X)):N=N+1:IFN>255 THEN N=255
1620 S$(X)=FNB$(N):LOCATE4,X+4,0:PRINTS$(X):LOCATE 9,20:PRINT"DATO EN DECIMAL:";
N;"   "
1630 GOTO 1590
1640 N=VAL("&B"+S$(X)):N=N-1:IFN<0 THEN N=0
1650 GOTO 1620
1660 LOCATE ,,0
1670 FOR A=20 TO 22
1680 LOCATE 0,A
1690 PRINT"
   ";
1700 NEXT A
1710 LOCATE 0,21
1720 RETURN
1730 GOSUB 1660
1740 PRINT"DATA ";
1750 FOR A=0 TO 13
1760 B=VAL("&B"+S$(A))
1770 PRINT RIGHT$("0"+HEX$(B),2);
1780 IF A<13 THEN PRINT",";
1790 NEXT A
1800 RETURN
1810 BEEP
1820 LOCATE ,,0
```



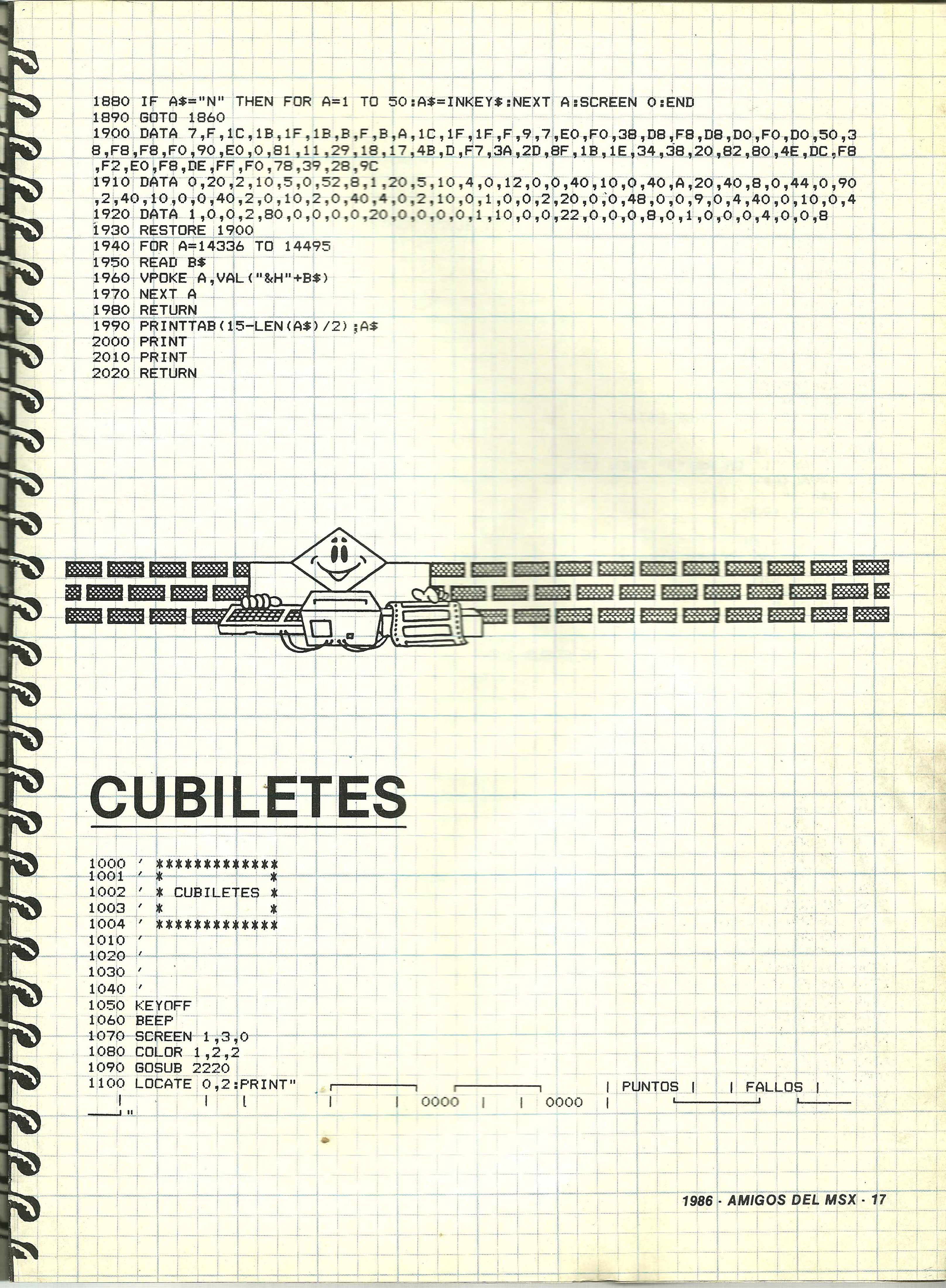
```
1830 STOP OFF
1840 SCREEN 0
1850 RETURN 1860
1860 PRINT"FIN"
1870 PRINT:END
```

DRIVER

```
1000 ' **********
1001 ' *        *
1002 ' * DRIVER *
1003 ' *        *
1004 ' **********
1010 '
1020 '
1030 '
1040 '
1050 KEYOFF
1060 BEEP
1070 SCREEN 3
1080 COLOR 15,1,1
1090 CLS
1100 OPEN "GRP:"AS#1
1110 PRESET (36,80)
1120 COLOR 7
1130 PRINT#1,"DRIVER"
1140 PRESET(32,80)
1150 COLOR 4
1160 PRINT#1,"DRIVER"
1170 LINE (0,50)-(256,60),6,BF
1180 LINE (0,130)-(256,140),6,BF
1190 PLAY "V15CEDGFEDFEBGFEDCCCV10CV5C","V1503CEDGFEDFEBGFEDCCCV14CV13CV12CV10CV
8CV5C"
1200 IF PLAY(0)=-1 THEN 1200
1210 CLOSE
1220 A=RND(-TIME)
1230 V=RND(1)/10
```

```
1240 C=13.94
1250 D=3
1260 IS=0
1270 S=144
1280 DEFFNG=VPEEK(6304+INT(S/8))
1290 DEFFNH=VPEEK(6305+INT(S/8))
1300 SCREEN 1,2,0
1310 COLOR 1,2,2
1320 FOR A=0 TO 22:PRINTTAB(11);"\\████████//":NEXT A
1330 GOSUB 1900
1340 SOUND 4,24
1350 SOUND 6,32
1360 SOUND 7,3
1370 SOUND 8,2
1380 SOUND 9,2
1390 SOUND 10,16
1400 SOUND 11,58
1410 SOUND 12,0
1420 SOUND13,14
1430 FOR A=-20 TO 32
1440 SOUND11,90-A
1450 PUT SPRITE1,(141,A),6,0
1460 FOR B=1 TO 75
1470 NEXT B
1480 NEXT A
1490 TIME=0
1500 IF D=1 THEN C=C+V
1510 IF D=2 THEN C=C-V
1520 IF RND(1)>.97 THEN D=1+INT(RND(1)*3):V=RND(1)/6
1530 LOCATE11+8*COS(C),23:PRINT"\\████████//"
1540 J=STICK(0)
1550 IF J=3 THENIS=IS+2
1560 IF J=7 THENIS=IS-2
1570 S=S+IS
1580 IF IS<>0 THEN IS=IS-SGN(IS)
1590 PUTSPRITE1,(S-3,32),6,0
1600 IF FNG<>219 OR FNH<>219 THEN GOTO 1620
1610 GOTO 1500
1620 BEEP
1630 SOUND 6,21
1640 SOUND 7,247
1650 SOUND 8,16
1660 SOUND 11,100
1670 SOUND 12,60
1680 SOUND 13,0
1690 FOR A=1 TO 5
1700 PUTSPRITE0,(S-3,32),15,A
1710 FOR B=1 TO200
1720 NEXT B
1730 NEXT A
1740 SCREEN 1:P=TIME
1750 SCREEN 1
1760 COLOR 7,1,1
1770 LOCATE 0,6
1780 A$="GAME OVER"
1790 GOSUB 1990
1800 LOCATE 0,12
1810 A$="PUNTOS:"+STR$(P)
1820 GOSUB 1990
1830 A$="OTRA PARTIDA (S/N)"
1840 GOSUB 1990
1850 POKE &HFCAB,255
1860 A$=INKEY$
1870 IF A$="S" THEN RUN
```

```
1880 IF A$="N" THEN FOR A=1 TO 50:A$=INKEY$:NEXT A:SCREEN 0:END
1890 GOTO 1860
1900 DATA 7,F,1C,1B,1F,1B,B,F,B,A,1C,1F,1F,F,9,7,E0,F0,38,D8,F8,D8,D0,F0,D0,50,3
8,F8,F8,F0,90,E0,0,81,11,29,18,17,4B,D,F7,3A,2D,8F,1B,1E,34,38,20,82,80,4E,DC,F8
,F2,E0,F8,DE,FF,F0,78,39,28,9C
1910 DATA 0,20,2,10,5,0,52,8,1,20,5,10,4,0,12,0,0,40,10,0,40,A,20,40,8,0,44,0,90
,2,40,10,0,0,40,2,0,10,2,0,40,4,0,2,10,0,1,0,0,2,20,0,0,48,0,0,9,0,4,40,0,10,0,4
1920 DATA 1,0,0,2,80,0,0,0,0,20,0,0,0,0,1,10,0,0,22,0,0,0,8,0,1,0,0,0,4,0,0,8
1930 RESTORE 1900
1940 FOR A=14336 TO 14495
1950 READ B$
1960 VPOKE A,VAL("&H"+B$)
1970 NEXT A
1980 RETURN
1990 PRINTTAB(15-LEN(A$)/2);A$
2000 PRINT
2010 PRINT
2020 RETURN
```



CUBILETES

```
1000 ' *************
1001 ' *           *
1002 ' * CUBILETES *
1003 ' *           *
1004 ' *************
1010 '
1020 '
1030 '
1040 '
1050 KEYOFF
1060 BEEP
1070 SCREEN 1,3,0
1080 COLOR 1,2,2
1090 GOSUB 2220
1100 LOCATE 0,2:PRINT"     ┌────────┐   ┌────────┐      | PUNTOS |    | FALLOS |
   |          |    |     |        | 0000 |    | 0000 |  └────────┘    └──────
───┘"
```

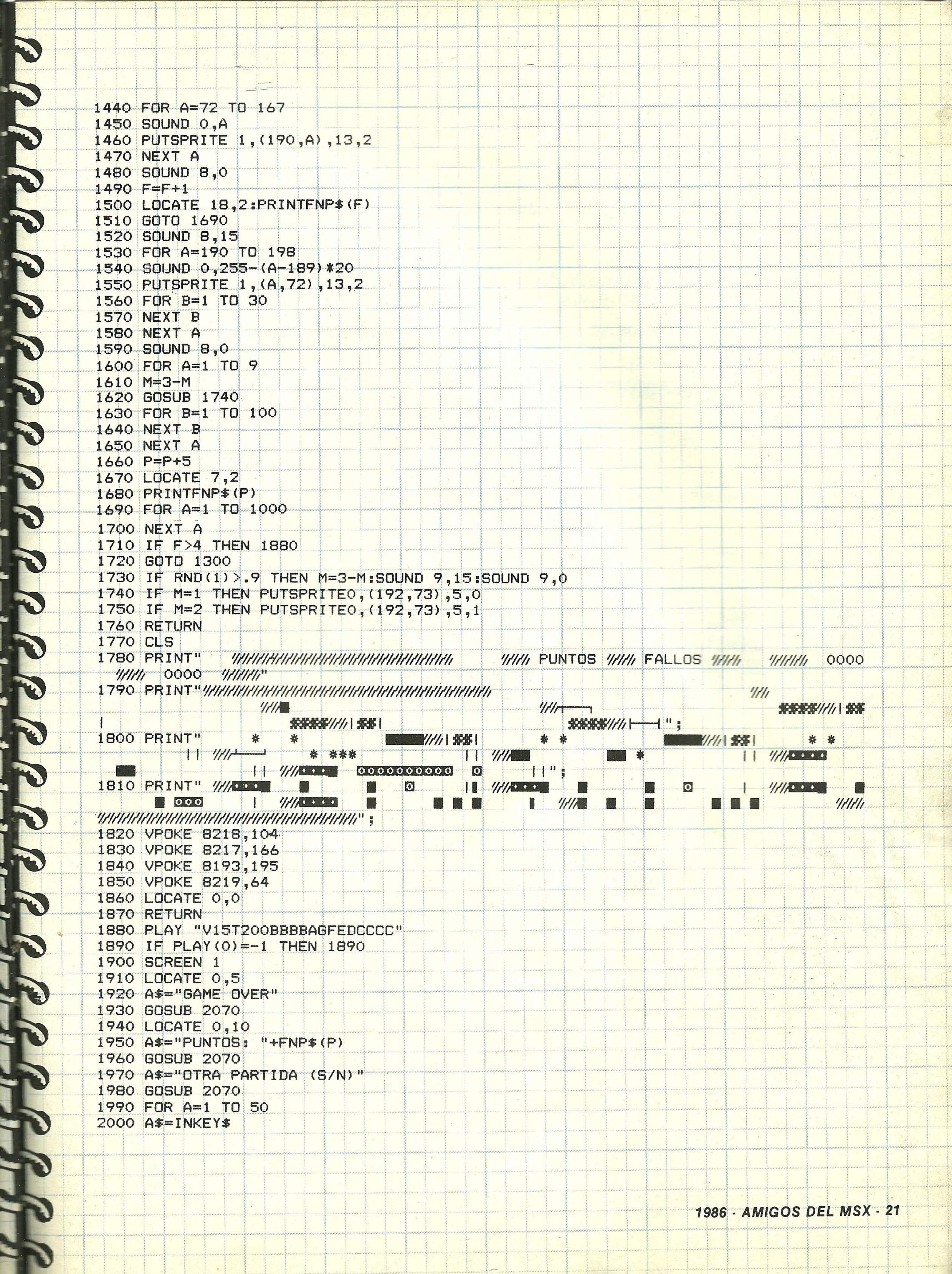
```
1110 LOCATE 0,17:PRINT"                    ┌─┐ ┌─┐ ┌─┐                    |1| |2| |3|
        └─┘ └─┘ └─┘"
1120 GOSUB 1730
1130 P=0
1140 F=0
1150 DEFFNP$(P)=RIGHT$("0000"+MID$(STR$(P),2,4),4)
1160 A$="--=< CUBILETES >=--"
1170 GOSUB 1900
1180 PLAY "V1504CDEGEEE","V1506CDEGEEE"
1190 IF PLAY(0)=-1 THEN 1190
1200 A$=" "
1210 GOSUB 1900
1220 PUTSPRITE5,(115,90),4,1
1230 N=2
1240 GOSUB 1500
1250 GOSUB 1810
1260 GOSUB 1600
1270 FOR A=1 TO 50
1280 A$=INKEY$
1290 NEXT A
1300 A$="ADIVINA DONDE ESTA"
1310 GOSUB 1900
1320 A$=INKEY$
1330 IF A$<"1" OR A$>"3" THEN 1320
1340 R=VAL(A$)
1350 A$=" "
1360 GOSUB 1900
1370 BEEP
1380 SOUND 8,15
1390 FOR A=100 TO 250 STEP 7
1400 SOUND 0,A
1410 NEXT A
1420 SOUND 8,0
1430 N=R
1440 GOSUB 1500
1450 IF U=R THEN GOSUB 1910 ELSE GOSUB 2000
1460 GOSUB 1770
1470 GOSUB 1850
1480 GOTO 1250
1490 PUTSPRITEN,(55+30*N,90),7,0:RETURN
1500 FORA=90 TO 65 STEP -1
1510 PUTSPRITEN,(55+30*N,A)
1520 BEEP
1530 NEXT A
1540 RETURN
1550 FOR A=65 TO 90
1560 PUTSPRITEN,(55+30*N,A)
1570 BEEP
1580 NEXT A
1590 RETURN
1600 U=RND(-TIME)
1610 U=1+INT(RND(1)*3)
1620 A$="!!! CAMBIO LA BOLA !!!"
1630 GOSUB 1900
1640 PUTSPRITE5,(55+30*U,90),4,1
1650 FOR A=1 TO 20
1660 SOUND 1,100+RND(1)*150
1670 SOUND 8,15
1680 FOR B=1 TO RND(1)*150
1690 NEXT B:SOUND 8,0
1700 FOR B=1TO 50
1710 NEXT B
1720 NEXT A
1730 FOR N=1TO3
```

```
1740 GOSUB 1490
1750 NEXTN
1760 RETURN
1770 FOR N=1TO3
1780 IF VPEEK(6912+4*N)=90 THEN GOSUB 1500
1790 NEXTN
1800 RETURN
1810 FOR N=1TO3
1820 IF VPEEK(6912+4*N)=65THEN GOSUB 1550
1830 NEXT N
1840 RETURN
1850 LOCATE 6,5
1860 PRINTFNP$(P)
1870 LOCATE 19,5
1880 PRINTFNP$(F)
1890 RETURN
1900 LOCATE 0,8:PRINT"                                    ":LOCATE 0,8:PRINTTAB(15-LEN(
A$)/2);A$:RETURN
1910 P=P+5
1920 GOSUB 1850
1930 SOUND 8,15
1940 FOR A=1 TO 10
1950 FOR B=0 TO 255 STEP A
1960 SOUND 0,B
1970 NEXT B
1980 NEXT A
1990 RETURN
2000 F=F+1
2010 GOSUB 1850
2020 SOUND 1,1:SOUND 8,15
2030 FOR A=150 TO 255 STEP .2
2040 SOUND 0,A
2050 NEXT A
2060 SOUND 8,0:SOUND 1,0
2070 IF F>4 THEN RETURN 2090
2080 RETURN
2090 GOSUB 1770
2100 GOSUB 1810
2110 A$="GAME OVER"
2120 GOSUB 1900
2130 FOR A=1 TO 2000
2140 NEXT A
2150 A$="OTRA PARTIDA (S/N)"
2160 GOSUB 1900
2170 POKE &HFCAB,255
2180 A$=INKEY$
2190 IF A$="S" THEN RUN
2200 IF A$="N" THEN SCREEN 0:END
2210 GOTO 2180
2220 DATA 7,C,19,13,37,27,27,33,3C,3F,3F,3F,3F,3F,1F,7,E0,F0,F8,F8,FC,FC,F4,CC,3
C,FC,FC,FC,FC,FC,F8,E0,0,0,0,0,0,0,0,0,0,1,2,3,3,1,0,0,0,0,0,0,0,0,0,0,80,C0,C
0,C0,80,0,0
2230 RESTORE 2220
2240 FOR A=14336 TO 14399
2250 READ B$
2260 VPOKE A,VAL("&H"+B$)
2270 NEXT A
2280 RETURN
```



CUCO

```
1000 ' *** CUCO ***
1010 '
1020 '
1030 '
1040 '
1050 KEYOFF
1060 BEEP
1070 SCREEN 3,2,0
1080 COLOR 1,15,15
1090 CLS
1100 OPEN "GRP:"AS#1
1110 LINE (50,50)-(210,150),1,BF
1120 PRESET (76,86),1
1130 COLOR 7
1140 PRINT#1,"CUCO"
1150 PRESET(72,86),1
1160 COLOR 4
1170 PRINT#1,"CUCO"
1180 LINE (50,50)-(210,150),6,B
1190 CLOSE
1200 PLAY "V15EDCDEFFDGEFCBAGCFDBEGCCCC"
1210 IF PLAY(0)=-1 THEN 1210
1220 SCREEN 1,2,0
1230 COLOR 1,15,15
1240 CLS
1250 P=0
1260 F=0
1270 DEFFNP$(P)=RIGHT$("0000"+MID$(STR$(P),2,4),4)
1280 GOSUB 1770
1290 GOSUB 2120
1300 M=1
1310 GOSUB 1730
1320 PUTSPRITE 1,(52,72),13,2
1330 IF STRIG(0)=-1 THEN GOTO 1350
1340 GOTO 1310
1350 SOUND 8,15
1360 SOUND 1,0
1370 FOR A=52 TO 190
1380 SOUND 0,190-A
1390 PUTSPRITE 1,(A,72),13,2
1400 NEXT A
1410 SOUND 8,0
1420 IF M=2 THEN 1520
1430 SOUND 8,15
```



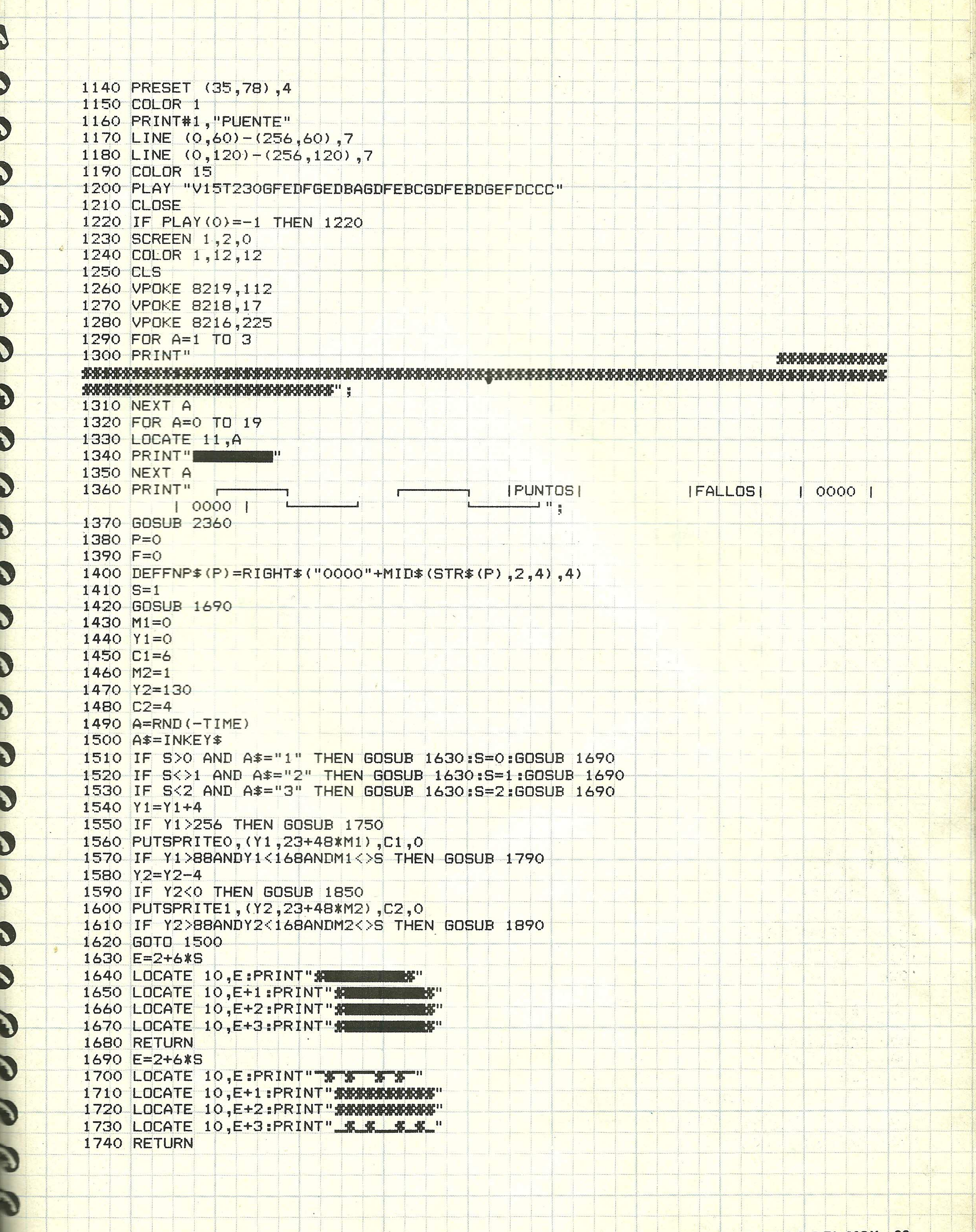
```
1440 FOR A=72 TO 167
1450 SOUND 0,A
1460 PUTSPRITE 1,(190,A),13,2
1470 NEXT A
1480 SOUND 8,0
1490 F=F+1
1500 LOCATE 18,2:PRINTFNP$(F)
1510 GOTO 1690
1520 SOUND 8,15
1530 FOR A=190 TO 198
1540 SOUND 0,255-(A-189)*20
1550 PUTSPRITE 1,(A,72),13,2
1560 FOR B=1 TO 30
1570 NEXT B
1580 NEXT A
1590 SOUND 8,0
1600 FOR A=1 TO 9
1610 M=3-M
1620 GOSUB 1740
1630 FOR B=1 TO 100
1640 NEXT B
1650 NEXT A
1660 P=P+5
1670 LOCATE 7,2
1680 PRINTFNP$(P)
1690 FOR A=1 TO 1000
1700 NEXT A
1710 IF F>4 THEN 1880
1720 GOTO 1300
1730 IF RND(1)>.9 THEN M=3-M:SOUND 9,15:SOUND 9,0
1740 IF M=1 THEN PUTSPRITE0,(192,73),5,0
1750 IF M=2 THEN PUTSPRITE0,(192,73),5,1
1760 RETURN
1770 CLS
1780 PRINT"  ////////////////////////////////////////////      //// PUNTOS //// FALLOS ////     ///// 0000
  //// 0000 //////"
1790 PRINT"//////////////////////////////////////////////////////////////        ///
            ///█                    ///┌──┐             ████///|██
|              ████///|██|              ████///├──┤";
1800 PRINT"     *   *         █████///|██|      * *        ████///|██|     * *
         ||  ///└──┘      *  ***            ||  ///██         ██ *          ||  ///█••••
  ██           ||  ///█••••█   ooooooooooo   o        ||";
1810 PRINT" ///█•••█    █       █    o      ||  ///█•••█    █       █    o    |   ///█•••█    █
       █ ooo        |    ///█••••█    █         █  █  █    █   ///█    █    █       █  █  █        ////
/////////////////////////////////////////////";
1820 VPOKE 8218,104
1830 VPOKE 8217,166
1840 VPOKE 8193,195
1850 VPOKE 8219,64
1860 LOCATE 0,0
1870 RETURN
1880 PLAY "V15T200BBBBAGFEDCCCC"
1890 IF PLAY(0)=-1 THEN 1890
1900 SCREEN 1
1910 LOCATE 0,5
1920 A$="GAME OVER"
1930 GOSUB 2070
1940 LOCATE 0,10
1950 A$="PUNTOS: "+FNP$(P)
1960 GOSUB 2070
1970 A$="OTRA PARTIDA (S/N)"
1980 GOSUB 2070
1990 FOR A=1 TO 50
2000 A$=INKEY$
```

```
2010 NEXT A
2020 POKE &HFCAB,255
2030 A$=INKEY$
2040 IF A$="S" THEN RUN
2050 IF A$="N" THEN SCREEN 0:END
2060 GOTO 2030
2070 PRINTTAB(15-LEN(A$)/2);A$
2080 PRINT
2090 PRINT
2100 PRINT
2110 RETURN
2120 DATA 0,0,0,3,7,3,0,0,0,0,0,0,0,0,0,0,C,38,78,B0,FC,FE,DF,1F,3F,3F,3F,1F,1F,
F,C,1F,0,0,6,3,1,0,1,6,0,0,0,0,0,0,0,0,C,38,78,B0,FC,FE,DF,1F,3F,3F,3F,1F,1F,F,C
,1F
2130 DATA 0,0,0,0,1C,3E,3E,1C,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0
2140 RESTORE 2120
2150 FOR A=14336 TO 1443i
2160 READ B$
2170 VPOKE A,VAL("&H"+B$)
2180 NEXT A
2190 RETURN
```



PUENTES

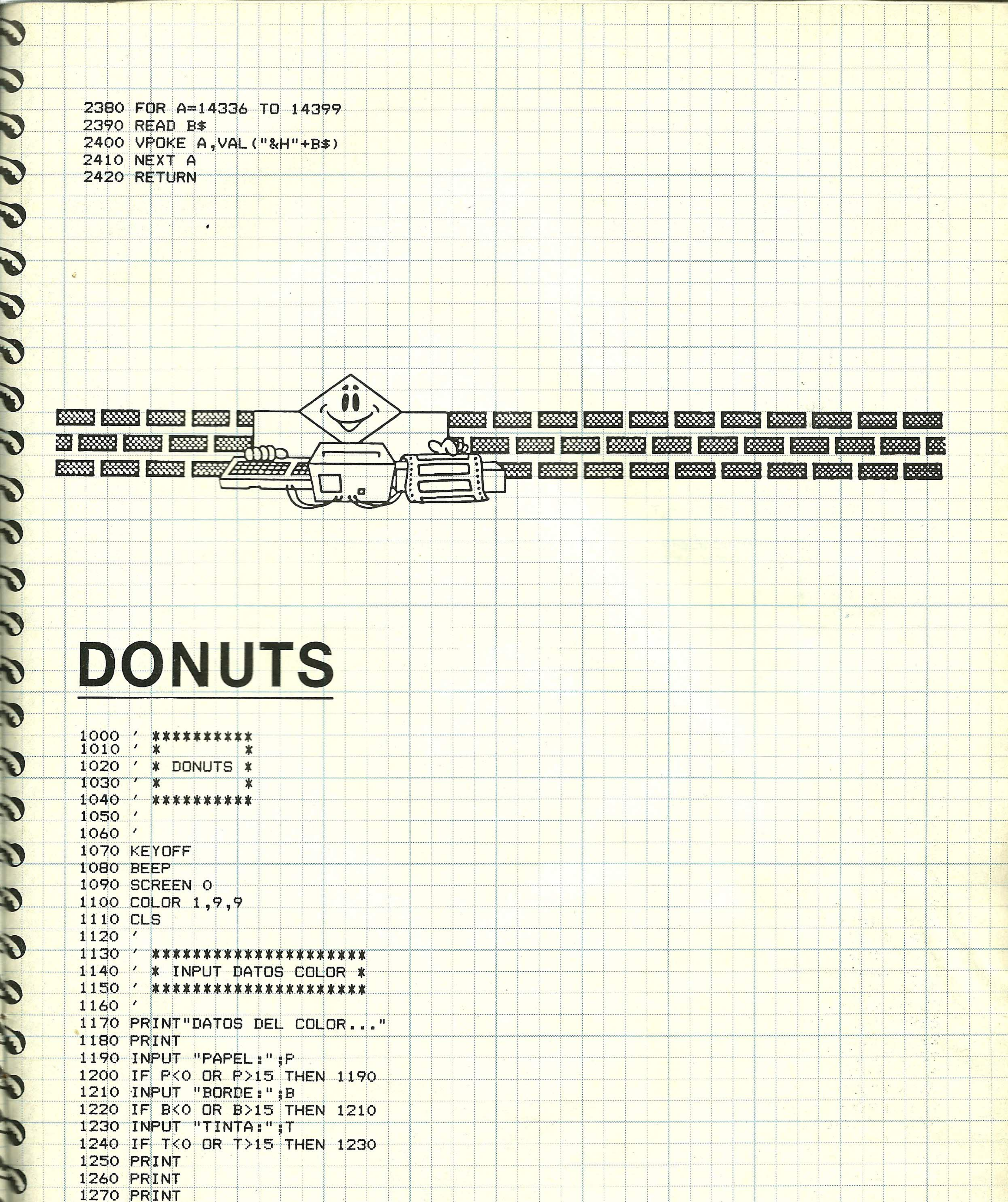
```
1000 ' **** PUENTES ****
1010 '
1020 '
1030 '
1040 '
1050 KEYOFF
1060 BEEP
1070 SCREEN 3,1,0
1080 COLOR 15,1,1
1090 CLS
1100 OPEN "GRP:" AS#1
1110 LINE (0,120)-(256,60),4,BF
1120 PRESET (39,78),4
1130 PRINT#1,"PUENTE"
```



```
1140 PRESET (35,78),4
1150 COLOR 1
1160 PRINT#1,"PUENTE"
1170 LINE (0,60)-(256,60),7
1180 LINE (0,120)-(256,120),7
1190 COLOR 15
1200 PLAY "V15T230GFEDFGEDBAGDFEBCGDFEBDGEFDCCC"
1210 CLOSE
1220 IF PLAY(0)=-1 THEN 1220
1230 SCREEN 1,2,0
1240 COLOR 1,12,12
1250 CLS
1260 VPOKE 8219,112
1270 VPOKE 8218,17
1280 VPOKE 8216,225
1290 FOR A=1 TO 3
1300 PRINT"                                                            ▒▒▒▒▒▒▒▒
▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒
▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒";
1310 NEXT A
1320 FOR A=0 TO 19
1330 LOCATE 11,A
1340 PRINT"██████████"
1350 NEXT A
1360 PRINT"  ┌─────┐          ┌─────┐      |PUNTOS|          |FALLOS|   | 0000 |
       | 0000 |  └─────┘              └─────"; 
1370 GOSUB 2360
1380 P=0
1390 F=0
1400 DEFFNP$(P)=RIGHT$("0000"+MID$(STR$(P),2,4),4)
1410 S=1
1420 GOSUB 1690
1430 M1=0
1440 Y1=0
1450 C1=6
1460 M2=1
1470 Y2=130
1480 C2=4
1490 A=RND(-TIME)
1500 A$=INKEY$
1510 IF S>0 AND A$="1" THEN GOSUB 1630:S=0:GOSUB 1690
1520 IF S<>1 AND A$="2" THEN GOSUB 1630:S=1:GOSUB 1690
1530 IF S<2 AND A$="3" THEN GOSUB 1630:S=2:GOSUB 1690
1540 Y1=Y1+4
1550 IF Y1>256 THEN GOSUB 1750
1560 PUTSPRITE0,(Y1,23+48*M1),C1,0
1570 IF Y1>88ANDY1<168ANDM1<>S THEN GOSUB 1790
1580 Y2=Y2-4
1590 IF Y2<0 THEN GOSUB 1850
1600 PUTSPRITE1,(Y2,23+48*M2),C2,0
1610 IF Y2>88ANDY2<168ANDM2<>S THEN GOSUB 1890
1620 GOTO 1500
1630 E=2+6*S
1640 LOCATE 10,E:PRINT"▒████████▒"
1650 LOCATE 10,E+1:PRINT"▒████████▒"
1660 LOCATE 10,E+2:PRINT"▒████████▒"
1670 LOCATE 10,E+3:PRINT"▒████████▒"
1680 RETURN
1690 E=2+6*S
1700 LOCATE 10,E:PRINT"‾▒‾▒‾‾▒‾▒‾"
1710 LOCATE 10,E+1:PRINT"▒▒▒▒▒▒▒▒▒▒"
1720 LOCATE 10,E+2:PRINT"▒▒▒▒▒▒▒▒▒▒"
1730 LOCATE 10,E+3:PRINT"_▒_▒__▒_▒_"
1740 RETURN
```

```
1750 Y1=0
1760 M1=INT(RND(1)*3)
1770 C1=2+INT(RND(1)*13)
1780 GOTO 1950
1790 GOSUB 2040
1800 PUTSPRITE0,,9,1
1810 M1=5
1820 FOR A=1 TO 200
1830 NEXT A
1840 GOTO 1990
1850 Y2=256
1860 M2=INT(RND(1)*3)
1870 C2=2+INT(RND(1)*13)
1880 GOTO 1950
1890 GOSUB 2040
1900 PUTSPRITE1,,9,1
1910 M2=6
1920 FOR A=1 TO 200
1930 NEXT A
1940 GOTO 1990
1950 P=P+5
1960 LOCATE 4,22
1970 PRINTFNP$(P)
1980 RETURN
1990 F=F+1
2000 LOCATE 22,22
2010 PRINTFNP$(F)
2020 IF F>9 THEN RETURN 2110
2030 RETURN
2040 SOUND 6,21
2050 SOUND 7,247
2060 SOUND 8,16
2070 SOUND 11,100
2080 SOUND 12,60
2090 SOUND 13,0
2100 RETURN
2110 BEEP
2120 PLAY "V15T200BBBBAGFEDCCCC"
2130 SCREEN 1
2140 LOCATE 0,5
2150 A$="GAME OVER":GOSUB 2300
2160 LOCATE 0,11
2170 A$="PUNTOS: "+FNP$(P)
2180 GOSUB 2300
2190 A$="OTRA PARTIDA (S/N)"
2200 GOSUB 2300
2210 FOR A=1 TO 50
2220 A$=INKEY$
2230 NEXT A
2240 POKE &HFCAB,255
2250 A$=INKEY$
2260 IF A$="S" THEN RUN
2270 IF A$="N" THEN SCREEN 0:END
2280 GOTO 2250
2290 LOCATE 0,0
2300 PRINTTAB(15-LEN(A$)/2);A$
2310 PRINT
2320 PRINT
2330 PRINT
2340 RETURN
2350 END
2360 DATA 0,0,0,1C,7F,F4,F3,F3,F3,F3,F4,7F,1C,0,0,0,0,0,0,38,FE,2F,CF,CF,CF,CF,2
F,FE,38,0,0,0,8,0,0,24,0,8,3,23,B,1,83,12,10,84,0,10,0,82,0,88,0,A0,4,E0,C0,C9,E
0,80,8,42,0,90
2370 RESTORE 2360
```

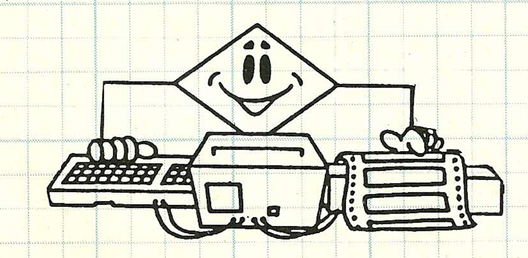
```
2380 FOR A=14336 TO 14399
2390 READ B$
2400 VPOKE A,VAL("&H"+B$)
2410 NEXT A
2420 RETURN
```

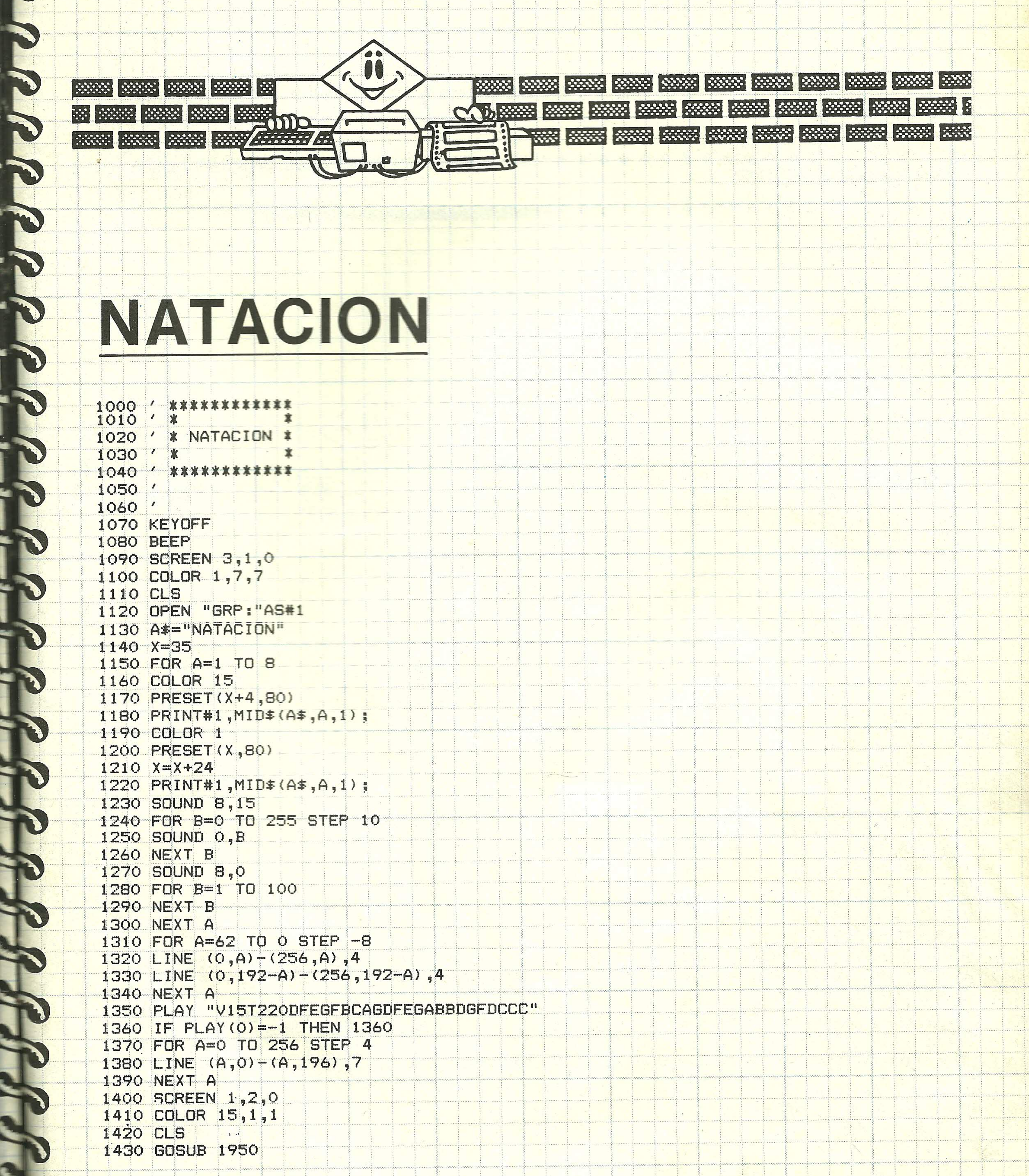


DONUTS

```
1000 ' **********
1010 ' *        *
1020 ' * DONUTS *
1030 ' *        *
1040 ' **********
1050 '
1060 '
1070 KEYOFF
1080 BEEP
1090 SCREEN 0
1100 COLOR 1,9,9
1110 CLS
1120 '
1130 ' *********************
1140 ' * INPUT DATOS COLOR *
1150 ' *********************
1160 '
1170 PRINT"DATOS DEL COLOR..."
1180 PRINT
1190 INPUT "PAPEL:";P
1200 IF P<0 OR P>15 THEN 1190
1210 INPUT "BORDE:";B
1220 IF B<0 OR B>15 THEN 1210
1230 INPUT "TINTA:";T
1240 IF T<0 OR T>15 THEN 1230
1250 PRINT
1260 PRINT
1270 PRINT
```

```
1280 '
1290 ' *********************
1300 ' * INPUT DATOS DONUT *
1310 ' *********************
1320 '
1330 PRINT"PARAMETROS DEL DONUT..."
1340 PRINT
1350 INPUT "GROSOR:";G
1360 INPUT "ANCHO:";X1
1370 INPUT "ALTO:";Y1
1380 INPUT "CONCENTRACION:";C
1390 SCREEN 2,1,0
1400 COLOR T,P,B
1410 CLS
1420 PI=3.1416
1430 '
1440 ' ********************
1450 ' * DIBUJO DEL DONUT *
1460 ' ********************
1470 '
1480 FOR A=0 TO 2*PI STEP PI/C
1490 X=X1*COS (A)
1500 Y=Y1*SIN (A)
1510 CIRCLE (X+127,Y+87),G,T
1520 NEXT A
1530 PLAY "V15O4CDO3BO4E2R4","V15O4EFDG2R4","V15O4GAGO5C2R4"
1540 IF PLAY(0)=-1 THEN 1540
1550 FOR A=1 TO 50
1560 A$=INKEY$
1570 NEXT A
1580 '
1590 ' **********************
1600 ' * ESPERA PARA SEGUIR *
1610 ' **********************
1620 '
1630 A$=INKEY$
1640 IF A$<>"" THEN RUN
1650 GOTO 1630
```



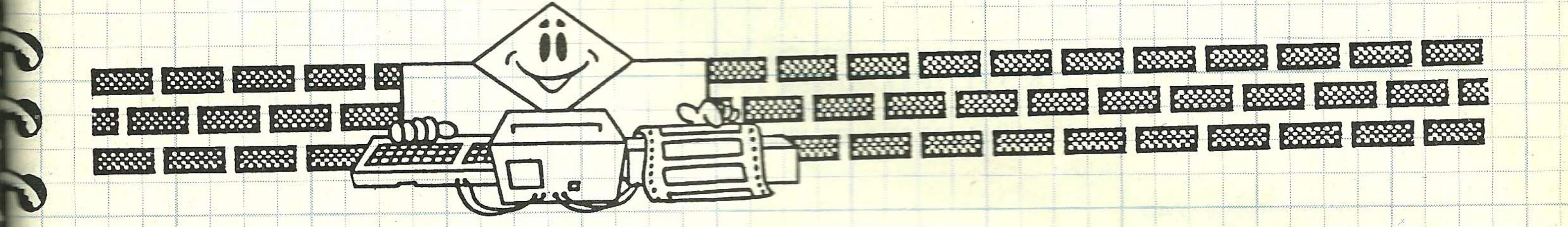


NATACION

```
1000 ' ************
1010 ' *          *
1020 ' * NATACION *
1030 ' *          *
1040 ' ************
1050 '
1060 '
1070 KEYOFF
1080 BEEP
1090 SCREEN 3,1,0
1100 COLOR 1,7,7
1110 CLS
1120 OPEN "GRP:"AS#1
1130 A$="NATACION"
1140 X=35
1150 FOR A=1 TO 8
1160 COLOR 15
1170 PRESET(X+4,80)
1180 PRINT#1,MID$(A$,A,1);
1190 COLOR 1
1200 PRESET(X,80)
1210 X=X+24
1220 PRINT#1,MID$(A$,A,1);
1230 SOUND 8,15
1240 FOR B=0 TO 255 STEP 10
1250 SOUND 0,B
1260 NEXT B
1270 SOUND 8,0
1280 FOR B=1 TO 100
1290 NEXT B
1300 NEXT A
1310 FOR A=62 TO 0 STEP -8
1320 LINE (0,A)-(256,A),4
1330 LINE (0,192-A)-(256,192-A),4
1340 NEXT A
1350 PLAY "V15T220DFEGFBCAGDFEGABBDGFDCCC"
1360 IF PLAY(0)=-1 THEN 1360
1370 FOR A=0 TO 256 STEP 4
1380 LINE (A,0)-(A,196),7
1390 NEXT A
1400 SCREEN 1,2,0
1410 COLOR 15,1,1
1420 CLS
1430 GOSUB 1950
```

```
1440 VPOKE 8218,247
1450 VPOKE 8217,103
1460 VPOKE 8219,119
1470 PRINT"▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒00.00▒▒▒▒▒▒▒▒▒▒▒▒▒
▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒";
1480 FOR A=1 TO 6
1490 A$=CHR$ 48+A)
1500 PRINT"\\\▶ ◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆";A$;"\\████████████████████████████ \\████
██████████████████████████";
1510 NEXT A
1520 PRINT"\\\▶ ◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒▒";
1530 DIM N(6)
1540 M=1
1550 H=1
1560 FOR A=1 TO 6
1570 N(A)=40
1580 PUTSPRITEA,(20,7+24*A),1,2
1590 NEXT A
1600 PLAY "V15O4CCR16CCR16O5CC"
1610 FORA=1TO1500:NEXTA
1620 FOR A=1 TO 6
1630 PUTSPRITEA,(28,7+24*A),1,3
1640 NEXT A
1650 TIME=0
1660 GOSUB 2080
1670 FORA=1TO150:NEXTA
1680 FOR A=1 TO 6
1690 PUTSPRITEA,(35,7+24*A),1,0
1700 NEXT A
1710 D=STICK(0)
1720 IF D=3 AND M=1 THEN M=2:N(1)=N(1)+4:GOTO 1740
1730 IF D=7 AND M=2 THEN M=1:N(1)=N(1)+4
1740 PUTSPRITE1,(N(1),31),4,M-1
1750 IF N(1)>230 THEN F=1:GOTO 1850
1760 X=2+INT(RND(1)*5)
1770 N(X)=N(X)+8
1780 PUTSPRITEX,(N(X),7+24*X),1,H-1
1790 H=3-H
1800 IF N(X)>230 THEN F=X:GOTO 1850
1810 LOCATE 23,1
1820 T=TIME
1830 PRINTUSING"##.##";T/50
1840 GOTO 1710
1850 LOCATE 1,1:PRINT" GANADOR:";F
1860 BEEP
1870 PLAY "V15O4CDO3BO4E2R4","V15O4EFDG2R4","V14O4GAGO5C2R4"
1880 IF PLAY(0)=-1 THEN 1880
1890 FOR A=1 TO 50
1900 A$=INKEY$
1910 NEXT A
1920 A$=INKEY$
1930 IF A$<>"" THEN RUN 1400
1940 GOTO 1920
1950 DATA 0,0,0,0,13,4F,2B,1D,A7,1F,2F,3,11,F,0,0,0,0,38,FE,E1,C0,DC,FC,FC,DC,C0
,C0,80,0,0,0,0,0,F,11,3,2F,1F,A7,1D,2B,4F,13,0,0,0,0,0,0,80,C0,C0,DC,FC,FC,DC,
C0,E1,FE,38,0,0
1960 DATA 0,0,0,0,3,1F,1F,7,7,1F,1F,3,0,0,0,0,0,0,78,FE,E1,DC,FC,FC,DC,E1,FE,7
8,0,0,0,0,0,0,0,1,FF,FF,7,7,FF,FF,1,0,0,0,0,0,0,38,FF,F0,EE,FE,FE,EE,F0,FF,38,
0,0,0
1970 DATA 0,0,7E,FF,FF,7E,0,0,0,0,7E,FF,FF,7E,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,
0
1980 RESTORE 1950
1990 FOR A=14336 TO 14463
2000 READ B$
```

```
2010 VPOKE A,VAL("&H"+B$)
2020 NEXT A
2030 FOR A=1656 TO 1687
2040 READ B$
2050 VPOKE A,VAL("&H"+B$)
2060 NEXT A
2070 RETURN
2080 SOUND 6,15
2090 SOUND 7,&B110111
2100 SOUND 8,&B10000
2110 SOUND 11,0
2120 SOUND 12,11
2130 SOUND 13,0
2140 RETURN
```



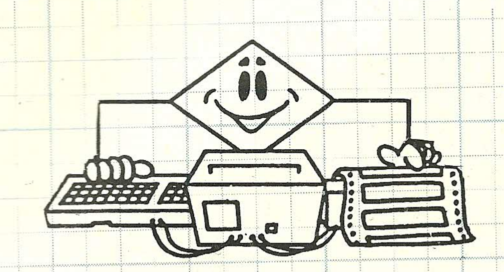
ALUNIZAJE

```
1000 ' *************
1010 ' *           *
1020 ' * ALUNIZAJE *
1030 ' *           *
1040 ' *************
1050 '
1060 '
1070 '
1080 '
1090 KEYOFF
1100 BEEP
1110 SCREEN 3,1,0
1120 COLOR 15,1,1
1130 CLS
1140 OPEN "GRP:"AS#1
1150 FOR A=0 TO 256 STEP 8
1160 PSET (A,RND(1)*70),15
1170 PSET (A,192-RND(1)*70),15
1180 NEXT A
1190 PRESET (54,80)
1200 COLOR 2
1210 PRINT#1,"LUNAR"
```

```
1220 PRESET (50,80)
1230 PRINT#1,"LUNAR"
1240 FOR A=96 TO 120 STEP 4
1250 FOR B=0 TO 256 STEP 4
1260 IF POINT(B,A)=2 THEN PSET(B,A),8
1270 NEXT B
1280 NEXT A
1290 PLAY "V15O6T200CO7CO6FEDO7CO6FEDFEO7CDGEFADGEFEDCCC","V15T200O3CCFEDCFEDFEC
DGEFADGEFEDCCC"
1300 CLOSE
1310 IF PLAY(0)=-1 THEN 1310
1320 SCREEN 2,2,0
1330 COLOR 15,1,1
1340 CLS
1350 GOSUB 2480
1360 P=0
1370 GOSUB 1640
1380 X=INT(255*RND(1))
1390 Y=0
1400 IX=0
1410 IY=0
1420 SPRITE OFF
1430 ON SPRITE GOSUB 2330
1440 D=STICK(0)
1450 IFD=1ORD=2ORD=8THEN IY=IY-1:IFIY<-8THEN IY=-8
1460 IFD=4ORD=5ORD=6THEN IY=IY+1:IFIY>8THEN IY=8
1470 IFD=2ORD=3ORD=4THEN IX=IX+1:IFIX>8THEN IX=8
1480 IFD=8ORD=7ORD=6THEN IX=IX-1:IFIX<-8THENIX=-8
1490 X=X+IX
1500 Y=Y+IY
1510 IFX>255 THEN X=0
1520 IFX<0 THEN X=255
1530 IF Y<0 THEN Y=0
1540 SPRITE OFF
1550 PUTSPRITE0,(X,Y),5,0
1560 SPRITE ON
1570 IF POINT(X,Y)=13 THEN 2000
1580 IF POINT(X+16,Y)=13 THEN 2000
1590 IF POINT(X,Y+16)=13 THEN 2000
1600 IF POINT(X+16,Y+16)=13 THEN 2000
1610 IF POINT(X+8,Y+16)=13 THEN 2000
1620 GOTO 1440
1630 END
1640 COLOR 15,1,1
1650 CLS
1660 A=RND(-TIME)
1670 FOR A=0 TO 256 STEP 4
1680 PSET (A,RND(1)*192),15
1690 NEXT A
1700 GOSUB 1940
1710 XB=50+INT(RND(1)*155)
1720 PUTSPRITE1,(XB,175),7,1
1730 LINE (XB-2,192)-(XB-2,184),13
1740 X=XB-2
1750 Y=184
1760 X=X-8
1770 Y=Y-INT(RND(1)*60)+INT(RND(1)*40)
1780 IF Y<45 THEN Y=Y+45
1790 IF Y>184 THEN Y=184
1800 DRAW "C13M=X;,=Y;"
1810 IF X>0 THEN 1760
1820 X=XB+17
1830 LINE(X,192)-(X,184),13
1840 Y=184
1850 X=X+8
1860 Y=Y-INT(RND(1)*60)+INT(RND(1)*40)
1870 IF Y<45 THEN Y=Y+45
1880 IF Y>184 THEN Y=184
1890 DRAW "C13M=X;,=Y;"
```

```
1900 IF X<256 THEN 1850
1910 PAINT (4,190),13,13
1920 PAINT (250,190),13,13
1930 RETURN
1940 X=10+RND(1)*235
1950 Y=10+RND(1)*20
1960 R=3+RND(1)*9
1970 CIRCLE (X,Y),R,2
1980 PAINT (X,Y),2,2
1990 RETURN
2000 BEEP
2010 SOUND 6,21
2020 SOUND 7,247
2030 SOUND 8,16
2040 SOUND 11,100
2050 SOUND 12,60
2060 SOUND 13,0
2070 FOR A=1 TO 55
2080 PUTSPRITE0,(X,Y),2+INT(RND(1)*13),2+INT(RND(1)*2)
2090 NEXT A
2100 FOR A=15 TO 1 STEP -1
2110 PUTSPRITE0,,A
2120 FOR B=1TO50
2130 NEXT B
2140 NEXT A
2150 FOR A=1 TO 500
2160 NEXT A
2170 SCREEN 1
2180 COLOR 7,1,1
2190 LOCATE 0,5
2200 A$="GAME OVER":GOSUB 2440
2210 A$="TE ESTRELLASTE":GOSUB 2440
2220 LOCATE 0,12
2230 A$="PUNTOS:"+STR$(P):GOSUB 2440
2240 A$="OTRA PARTIDA (S/N)":GOSUB 2440
2250 FOR A=1 TO 50
2260 A$=INKEY$
2270 NEXT A
2280 POKE &HFCAB,255
2290 A$=INKEY$
2300 IF A$="S" THEN RUN 1320
2310 IF A$="N" THEN SCREEN 0:END
2320 GOTO 2290
2330 SPRITE OFF
2340 RETURN 2350
2350 IFIY>3THEN2000
2360 PUTSPRITE0,(XB,168)
2370 BEEP
2380 PLAY "V15O4CDO3BO4E2R4","V15O4EFDG2R4","V15O4GAGO5C2R4"
2390 IF PLAY(0)=-1 THEN 2390
2400 FOR A=1 TO 500
2410 NEXT A
2420 P=P+75
2430 GOTO 1370
2440 PRINTTAB(15-LEN(A$)/2);A$
2450 PRINT:PRINT
2460 PRINT
2470 RETURN
2480 DATA 3,F,11,21,41,43,FF,AB,AB,FF,7F,F,19,31,61,F3,C0,F0,88,84,82,C2,FF,D5,D
5,FF,FE,F0,98,8C,86,CF,0,0,0,0,0,0,0,0,AB,FF,FF,FF,D5,D5,FF,FF,0,0,0,0,0,0,0,0,D
5,FF,FF,FF,AB,AB,FF,FF
2490 DATA 2,20,0,82,30,1A,D,27,1B,5F,3,1F,85,25,0,8,20,1,0,88,10,A4,D0,C8,F1,E0,
44,E0,50,4,20,A1,0,4,0,42,0,8,81,0,14,0,10,45,0,12,0,0,0,0,40,0,22,0,8,0,A4,0,0,
22,8,0,0,90
```

```
2500 RESTORE 2480
2510 FORA=14336 TO 14463
2520 READ B$
2530 VPOKE A,VAL("&H"+B$)
2540 NEXT A
2550 RETURN
```



IAN KEY-COVER

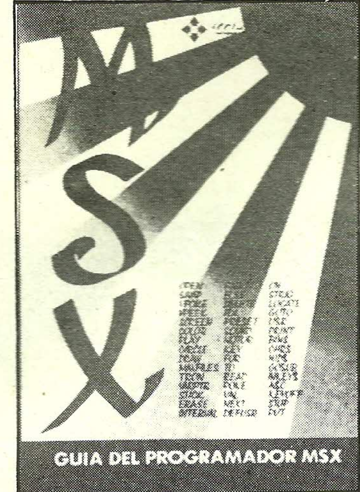


IAN KEY-COVER, ES EL PROTECTOR IDEAL PARA EL TECLADO DE SU AMSTRAD 6128 ESPECIALMENTE DISEÑADO PARA REUNIR TODAS LAS CARACTERISTICAS ADECUADAS PARA ELLO:

- PROTECCION FIRME DEL TECLADO DEL CPC 6128 (REALIZADO CON RESISTENTE METACRILATO DE UNA SOLA PIEZA CON NERVIOS LATERALES PARA FIJACION EN EL REBORDE DEL CONJUNTO DE SU ORDENADOR).
- AJUSTE PERFECTO EN SU ORDENADOR CON SUAVE PRECISION Y COBERTURA TOTAL.
- TRANSPARENTE (CONFIRIENDOLE LA PROPIEDAD DE VISUALIZAR EN TODO MOMENTO SU TECLADO).
- PROTECCION CONTINUA CONTRA ELEMENTOS EXTERNOS (COMO: DERRAMES DE LIQUIDOS, GOLPES, ETC.) ADEMAS DE GOZAR DE LA SEGURIDAD DEL BUEN FUNCIONAMIENTO DE SU ORDENADOR AL REANUDAR SU DIARIO QUEHACER. UN POCO DE CAFE DERRAMADO SOBRE SU TECLADO ELEVARA ENORMEMENTE EL PRESUPUESTO ANUAL DE SU ORDENADOR. EVITE EL RIESGO, PROTEJASE.
- RESGUARDO PERMANENTE CONTRA EL POLVO Y LA POLUCION (EL 50 % DE LAS AVERIAS DE SU TECLADO SON MOTIVADOS POR EL CONTACTO CONSTANTE DE ESTE CON EL POLVO Y LAS PARTICULAS ATMOSFERICAS, EL EXCESO DE HUMEDAD, ETC.). ELIMINE UN RIESGO CONTINUO, DOSIFIQUELO.
- MANTENGALO LIMPIO SU AMSTRAD 6128, CUBRIENDOLO CON IAN KEY-COVER.
- DELE AL TECLADO DE SU AMSTRAD 6128 ESA SENSACION DE PULCRITUD, SENTIDO DEL ORDEN Y APARIENCIA EXTERNA QUE SU AREA DE TRABAJO, ESTUDIO O ENSEÑANZA, REQUIERE.

BIBLIOGRAFIA

Para Programadores MSX tu fiel compañero.



Esto no es un libro para el principiante novato, al contrario, introduce al programador MSX "dentro" del ordenador, para mostrarle exactamente como funciona y como obtener el máximo partido.

Los autores han dividido su libro en dos partes.

La primera parte cubre el diseño del sistema, como el vocabulario de BASIC se relaciona con los ordenadores MSX, y una introducción código máquina. Encontrará explicaciones detalladas sobre la organización de la memoria, los modos de pantalla y los circuitos de vide y sonido.

La segunda parte se dedica al uso del lenguaje ensamblador en el sistema MSX. Los principales apartados incluyen los puntos:

— El procesador de pantalla de vídeo.
— El circuito de sonido AY-3-8910.
— Entradas/Salidas.

Tanto si necesitas escribir programas de alta eficacia o solamente quieres como trabaja tu ordenador, este libro será inestimable. Pensamos que rapidamente se convertirá en el texto base para aquellos programadores que quieren hacer algo más que escribir programas en BASIC.

P.V.P. 1800 pts!

CODIGO MAQUINA

PROGRAMACION PRACTICA



La llegada de standar MSX, marca un paso significativo dentro del mundo de los ordenadores domésticos. Ofrece infinidad de excitantes oportunidades para programadores y usuarios.

Este libro, supone que no tienes conocimientos previos sobre código máquina. Emexplicando las equivalentes en código máquina, de las principales instrucciones en Basic, tales como IF, FOR/NEXT, PRINT, GOTO, GOSUB, etc... Continúa con la descripción muy detallada de las rutinas individuales de un simple juego: "INVASOR DEL ESPACIO", y cómo se enlazan estas rutinas que puedes àprovechar en tus programas en Basic.

- Aprende lo fácil que es incorporar rutinas en código máquina dentro de tus programas en Basic.
- Usa el código máquina para crear sonido y gráficos.
- Diseña tus propios caracteres y "escenarios" con dos programas fáciles de usar.

Tanto si simplemente desea incluir rutinas para acelerar y mejorar tus programas en Basic, como si quieres un programa completo y potente en código máquina, encontrarás este libro extremadamente útil. En él está suprimida la teoria que dificulta el código máquina, y se presenta de una forma práctica y divertida de aprenderlo.

P.V.P. 1.200 pts.

---

ra-ma

- La mayor variedad de libros de microinformática, capaces de satisfacer todas sus necesidades, ya sean profesionales, familiares, culturales...
- Todo tipo de información bibliográfica sobre microordenadores, desde AMSTRAD a Sinclair QL

TARJETA DE PEDIDO

Domicilio de envíos:

Nombre y apellidos ....
Domicilio .... N.º...... Piso...... Pta.......
C. P. .... Ciudad .... Provincia ....

Ruego sírvanse remitirme CONTRA REEMBOLSO los siguientes libros:

Número	Cantidad	TITULO Y AUTOR	Importe

Fecha ..../........../.................. Fdo.:

Libros, Revistas, Suscripciones, Importación y Distribución
Chuquinquirá, 28. Local 4 (Cocuy). 28033 MADRID.
Telef.: 764 50 95